PROJECT REPORT

TO: ENVIRONMENTAL EVALUATION COMMITTEE — **AGENDA DATE: July 28, 2022**

FROM: PLANNING & DEVELOPMENT SERVICES — **AGENDA TIME 1:30 PM/ No. 6**

PROJECT TYPE: ZC #21-0004 - Salton Group, LLC SUPERVISORY DISTRICT #5

LOCATION: 551 Pruett Road, APN: 058-010-052-000

Calexico, CA 92231 PARCEL SIZE: +/- 50.64 acres

GENERAL PLAN (existing) Urban Area (Calexico) GENERAL PLAN (proposed) NA

ZONE (existing) A-2-U (General Agriculture, within an Urban Area) ZONE (proposed) N/A

GENERAL PLAN FINDINGS ☒ CONSISTENT ☐ INCONSISTENT ☐ MAY BE/FINDINGS

PLANNING COMMISSION DECISION: HEARING DATE: ________

☐ APPROVED ☐ DENIED ☐ OTHER

PLANNING DIRECTORS DECISION: HEARING DATE: ________

☐ APPROVED ☐ DENIED ☐ OTHER

ENVIROMENTAL EVALUATION COMMITTEE DECISION: HEARING DATE: 07/28/2022

INITIAL STUDY: #21-0031

☐ NEGATIVE DECLARATION ☐ MITIGATED NEG. DECLARATION ☐ EIR

DEPARTMENTAL REPORTS / APPROVALS:

PUBLIC WORKS	☒ NONE	☐ ATTACHED
AG	☒ NONE	☐ ATTACHED
APCD	☐ NONE	☒ ATTACHED
E.H.S.	☒ NONE	☐ ATTACHED
FIRE / OES	☐ NONE	☒ ATTACHED
SHERIFF.	☒ NONE	☐ ATTACHED
OTHER	CEO, Caltrans	

REQUESTED ACTION:

(See Attached)

☐ NEGATIVE DECLARATION
☐ MITIGATED NEGATIVE DECLARATION

Initial Study & Environmental Analysis
For:

IS #21-0031
Zone Change (ZC) #21-0004 Salton Group, LLC

Prepared By:

COUNTY OF IMPERIAL
Planning & Development Services Department
801 Main Street
El Centro, CA 92243
(442) 265-1736
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(July 2022)

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SECTION 1
INTRODUCTION

A. PURPOSE

This document is a ☐ policy-level; ☒ project level Initial Study for evaluation of potential environmental impacts resulting with the proposed Zone Change (ZC) #21-0004 Salton Group, LLC (Refer to Exhibit "A" & "B").

B. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REQUIREMENTS AND THE IMPERIAL COUNTY'S GUIDELINES FOR IMPLEMENTING CEQA

As defined by Section 15063 of the State California Environmental Quality Act (CEQA) Guidelines and Section 7 of the County's "CEQA Regulations Guidelines for the Implementation of CEQA, as amended", an **Initial Study** is prepared primarily to provide the Lead Agency with information to use as the basis for determining whether an Environmental Impact Report (EIR), Negative Declaration, or Mitigated Negative Declaration would be appropriate for providing the necessary environmental documentation and clearance for any proposed project.

☐ According to Section 15065, an **EIR** is deemed appropriate for a particular proposal if the following conditions occur:

- The proposal has the potential to substantially degrade quality of the environment.
- The proposal has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.
- The proposal has possible environmental effects that are individually limited but cumulatively considerable.
- The proposal could cause direct or indirect adverse effects on human beings.

☐ According to Section 15070(a), a **Negative Declaration** is deemed appropriate if the proposal would not result in any significant effect on the environment.

☐ According to Section 15070(b), a **Mitigated Negative Declaration** is deemed appropriate if it is determined that though a proposal could result in a significant effect, mitigation measures are available to reduce these significant effects to insignificant levels.

This Initial Study has determined that the proposed applications will not result in any potentially significant environmental impacts and therefore, a Negative Declaration is deemed as the appropriate document to provide necessary environmental evaluations and clearance as identified hereinafter.

This Initial Study and Negative Declaration are prepared in conformance with the California Environmental Quality Act of 1970, as amended (Public Resources Code, Section 21000 et. seq.); Section 15070 of the State & County of Imperial's Guidelines for Implementation of the California Environmental Quality Act of 1970, as amended (California Code of Regulations, Title 14, Chapter 3, Section 15000, et. seq.); applicable requirements of the County of Imperial; and the regulations, requirements, and procedures of any other responsible public agency or an agency with jurisdiction by law.

Pursuant to the County of Imperial Guidelines for Implementing CEQA, depending on the project scope, the County of Imperial Board of Supervisors, Planning Commission and/or Planning Director is designated the Lead Agency, in accordance with Section 15050 of the CEQA Guidelines. The Lead Agency is the public agency which has the principal responsibility for approving the necessary environmental clearances and analyses for any project in the County.

C. INTENDED USES OF INITIAL STUDY AND NEGATIVE DECLARATION

This Initial Study and Negative Declaration are informational documents which are intended to inform County of Imperial decision makers, other responsible or interested agencies, and the general public of potential environmental effects of the proposed applications. The environmental review process has been established to enable public agencies to evaluate environmental consequences and to examine and implement methods of eliminating or reducing any potentially adverse impacts. While CEQA requires that consideration be given to avoiding environmental damage, the Lead Agency and other responsible public agencies must balance adverse environmental effects against other public objectives, including economic and social goals.

The Initial Study and Negative Declaration, prepared for the project will be circulated for a period of 20 days (*30-days if submitted to the State Clearinghouse for a project of area-wide significance*) for public and agency review and comments. At the conclusion, if comments are received, the County Planning & Development Services Department will prepare a document entitled "Responses to Comments" which will be forwarded to any commenting entity and be made part of the record within 10-days of any project consideration.

D. CONTENTS OF INITIAL STUDY & NEGATIVE DECLARATION

This Initial Study is organized to facilitate a basic understanding of the existing setting and environmental implications of the proposed applications.

SECTION 1

I. INTRODUCTION presents an introduction to the entire report. This section discusses the environmental process, scope of environmental review, and incorporation by reference documents.

SECTION 2

II. ENVIRONMENTAL CHECKLIST FORM contains the County's Environmental Checklist Form. The checklist form presents results of the environmental evaluation for the proposed applications and those issue areas that would have either a potentially significant impact, potentially significant unless mitigation incorporated, less than significant impact or no impact.

PROJECT SUMMARY, LOCATION AND EVIRONMENTAL SETTINGS describes the proposed project entitlements and required applications. A description of discretionary approvals and permits required for project implementation is also included. It also identifies the location of the project and a general description of the surrounding environmental settings.

ENVIRONMENTAL ANALYSIS evaluates each response provided in the environmental checklist form. Each response checked in the checklist form is discussed and supported with sufficient data and analysis as necessary. As appropriate, each response discussion describes and identifies specific impacts anticipated with project implementation.

SECTION 3

III. MANDATORY FINDINGS presents Mandatory Findings of Significance in accordance with Section 15065 of the CEQA Guidelines.

IV. PERSONS AND ORGANIZATIONS CONSULTED identifies those persons consulted and involved in preparation of this Initial Study and Negative Declaration.

V. REFERENCES lists bibliographical materials used in preparation of this document.

VI. NEGATIVE DECLARATION – COUNTY OF IMPERIAL

VII. FINDINGS

SECTION 4

VIII. RESPONSE TO COMMENTS (IF ANY)

IX. MITIGATION MONITORING & REPORTING PROGRAM (MMRP) (IF ANY)

E. SCOPE OF ENVIRONMENTAL ANALYSIS

For evaluation of environmental impacts, each question from the Environmental Checklist Form is summarized and responses are provided according to the analysis undertaken as part of the Initial Study. Impacts and effects will be evaluated and quantified, when appropriate. To each question, there are four possible responses, including:

1. **No Impact:** A "No Impact" response is adequately supported if the impact simply does not apply to the proposed applications.

2. **Less Than Significant Impact:** The proposed applications will have the potential to impact the environment. These impacts, however, will be less than significant; no additional analysis is required.

3. **Potentially Significant Unless Mitigation Incorporated:** This applies where incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact".

4. **Potentially Significant Impact:** The proposed applications could have impacts that are considered significant. Additional analyses and possibly an EIR could be required to identify mitigation measures that could reduce these impacts to less than significant levels.

F. POLICY-LEVEL or PROJECT LEVEL ENVIRONMENTAL ANALYSIS

This Initial Study and Negative Declaration will be conducted under a ☐ policy-level, ☒ project level analysis. Regarding mitigation measures, it is not the intent of this document to "overlap" or restate conditions of approval that are commonly established for future known projects or the proposed applications. Additionally, those other standard requirements and regulations that any development must comply with, that are outside the County's jurisdiction, are also not considered mitigation measures and therefore, will not be identified in this document.

G. TIERED DOCUMENTS AND INCORPORATION BY REFERENCE

Information, findings, and conclusions contained in this document are based on incorporation by reference of tiered documentation, which are discussed in the following section.

1. Tiered Documents

As permitted in Section 15152(a) of the CEQA Guidelines, information and discussions from other documents can be included into this document. Tiering is defined as follows:

"Tiering refers to using the analysis of general matters contained in a broader EIR (such as the one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project."

Tiering also allows this document to comply with Section 15152(b) of the CEQA Guidelines, which discourages redundant analyses, as follows:

"Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects including the general plans, zoning changes, and development projects. This approach can eliminate repetitive discussion of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review. Tiering is appropriate when the sequence of analysis is from an EIR prepared for a general plan, policy or program to an EIR or negative declaration for another plan, policy, or program of lesser scope, or to a site-specific EIR or negative declaration."

Further, Section 15152(d) of the CEQA Guidelines states:

"Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or negative declaration on the later project to effects which:

(1) Were not examined as significant effects on the environment in the prior EIR; or

(2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means."

2. Incorporation By Reference

Incorporation by reference is a procedure for reducing the size of EIRs/MND and is most appropriate for including long, descriptive, or technical materials that provide general background information, but do not contribute directly to the specific analysis of the project itself. This procedure is particularly useful when an EIR or Negative Declaration relies on a broadly-drafted EIR for its evaluation of cumulative impacts of related projects (*Las Virgenes Homeowners Federation v. County of Los Angeles* [1986, 177 Ca.3d 300]). If an EIR or Negative Declaration relies on information from a supporting study that is available to the public, the EIR or Negative Declaration cannot be deemed unsupported by evidence or analysis (*San Francisco Ecology Center v. City and County of San Francisco* [1975, 48 Ca.3d 584, 595]). This document incorporates by reference appropriate information from the "Final Environmental Impact Report and Environmental Assessment for the "County of Imperial General Plan EIR" prepared by Brian F. Mooney Associates in 1993 and updates.

When an EIR or Negative Declaration incorporates a document by reference, the incorporation must comply with Section 15150 of the CEQA Guidelines as follows:

- The incorporated document must be available to the public or be a matter of public record (CEQA Guidelines Section 15150[a]). The General Plan EIR and updates are available, along with this document, at the County of Imperial Planning & Development Services Department, 801 Main Street, El Centro, CA 92243 Ph. (442) 265-1736.

- This document must be available for inspection by the public at an office of the lead agency (CEQA Guidelines Section 15150[b]). These documents are available at the County of Imperial Planning & Development Services Department, 801 Main Street, El Centro, CA 92243 Ph. (442) 265-1736.

- These documents must summarize the portion of the document being incorporated by reference or briefly describe information that cannot be summarized. Furthermore, these documents must describe the relationship between the incorporated information and the analysis in the tiered documents (CEQA Guidelines Section 15150[c]). As discussed above, the tiered EIRs address the entire project site and provide background and inventory information and data which apply to the project site. Incorporated information and/or data will be cited in the appropriate sections.

- These documents must include the State identification number of the incorporated documents (CEQA Guidelines Section 15150[d]). The State Clearinghouse Number for the County of Imperial General Plan EIR is SCH #93011023.

- The material to be incorporated in this document will include general background information (CEQA Guidelines Section 15150[f]). This has been previously discussed in this document.

II. Environmental Checklist

1. **Project Title**: Zone Change (ZC) #21-0004 Salton Group, LLC
2. **Lead Agency**: Imperial County Planning & Development Services Department
3. **Contact person and phone number**: Michael Abraham, Assistant Director (442)265-1736, ext. 1775
4. **Address**: 801 Main Street, El Centro CA, 92243
5. **E-mail**: michaelabraham@co.imperial.ca.us
6. **Project location**: 551 Pruett Road, Calexico CA 92231. The property is legally described as a portion of the East Half, of the Northwest Quarter of Section 11, T17S, R14 East, S.B.B.M. in an Unincorporated Area of the County of Imperial, State of California, Assessor's Parcel Numbers 058-010-052-000.
7. **Project sponsor's name and address**:

   Salton Group, LLC
   2711 N. Sepulveda Blvd Ste 233
   Manhattan Beach CA 90266

8. **General Plan designation**: Urban (Calexico)
9. **Zoning**: A-2-U (General Agriculture) to M-1 (Light Industrial)

10. **Description of project:** As proposed, the proposed project consists of a zone change from A-2-U (General Agriculture) to M-1 (Light Industrial) for the proposed use of Industrial Hemp Processing in APN 058-010-052. The parcel is roughly 44.81 acres just north and west of the city of Calexico.

The intent of the zone change in Imperial County is for the proposed use of Industrial Hemp Processing. The project will process the stalk of grain hemp through decortication, which is the removal of the outer layer or cortex from the structure. Hemp stalk does not contain any THC content and is of the grain or fiber type varieties, ideal for industrial hemp processing. After removing the fibrous exterior of the stalk from the hurd material and running through a series of separation machines, the products are then processed for different applications such as, but not limited to, fiber boards, press wood, ropes, hempcrete, carpets, etc. These products are bast fiber and hurd fiber.

Through this project, it is estimated that over twenty-five jobs will be created. The proposed source of hemp will derive from farmers in Imperial County and the sale of the finish hemp products will be within 500 miles from the facility. The proposed hours of operations are Monday-Friday from 9am - 5pm. In addition, daily traffic is estimated to be low and will consist of one or two trucks per day entering and leaving the facility.

Upon zone change approval, registering with the California Department of Food and Agriculture Market Enforcement Branch, obtaining a processing license, and acquiring application forms for submission must be completed prior to commencing operations.

11. **Surrounding land uses and setting**: The project site is bordered by general agricultural land to the west; single family residential to the south; and a mixture of light industrial and residential to the east and north.

12. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement.):

13. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentially, etc.?

A Native American Contact Program has been enacted with local Tribes and the Native American Heritage Commission. While no Tribal responses have been received related to the current effort, the County will be notified with any tribal responses as they are received. Refer to **Appendix 6, Cultural Resources Survey Report.**

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code, Section 21080.3.2). Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code, Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code, Section 21082.3 (c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology /Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology / Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☐ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

ENVIRONMENTAL EVALUATION COMMITTEE (EEC) DETERMINATION

After Review of the Initial Study, the Environmental Evaluation Committee has:

☐ Found that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ Found that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ Found that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ Found that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ Found that although the proposed project could have a significant effect on the environment, ~~because~~ all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DE MINIMIS IMPACT FINDING: ☐ Yes ☐ No

EEC VOTES	YES	NO	ABSENT
PUBLIC WORKS	☐	☐	☐
ENVIRONMENTAL HEALTH SVCS	☐	☐	☐
OFFICE EMERGENCY SERVICES	☐	☐	☐
APCD	☐	☐	☐
AG	☐	☐	☐
SHERIFF DEPARTMENT	☐	☐	☐
ICPDS	☐	☐	☐

Jim Minnick, Director of Planning/EEC Chairman Date:

PROJECT SUMMARY

A. Project Location: 551 Pruett Road, Calexico CA 92231. The property is legally described as a portion of the East Half, of the Northwest Quarter of Section 11, T17S, R14 East, S.B.B.M. in an Unincorporated Area of the County of Imperial, State of California, Assessor's Parcel Numbers 058-010-052-000.

B. Project Summary: As proposed, the proposed project consists of a zone change from A-2-U (General Agriculture) to M-1 (Light Industrial) for the proposed use of Industrial Hemp Processing in APN 058-010-052. The parcel is roughly 44.81 acres just north of the city of Calexico.

The intent of the zone change in Imperial County is for the proposed use of Industrial Hemp Processing. The project will process the stalk of grain hemp through decortication, which is the removal of the outer layer or cortex from the structure. Hemp stalk does not contain any THC content and is of the grain or fiber type varieties, ideal for industrial hemp processing. After removing the fibrous exterior of the stalk from the hurd material and running through a series of separation machines, the products are then processed for different applications such as, but not limited to, fiber boards, press wood, ropes, hempcrete, carpets, etc. These products are bast fiber and hurd fiber.

Through this project, it is estimated that over twenty-five jobs will be created. The proposed source of hemp will derive from farmers in Imperial County and the sale of the finish hemp products will be within 500 miles from the facility. The proposed hours of operations are Monday-Friday from 9am - 5pm. In addition, daily traffic is estimated to be low and will consist of one or two trucks per day entering and leaving the facility.

Upon zone change approval, registering with the California Department of Food and Agriculture Market Enforcement Branch, obtaining a processing license, and acquiring application forms for submission must be completed prior to commencing operations.

C. Environmental Setting: The project site is vacant and partially disturbed. The project site is near general agricultural land and bordered by vacant land to the west; single family residential to the south; and a mixture of light industrial and residential to the east and north. A railroad is located east of the project site, separating the residential homes.

D. Analysis: The project site is currently zoned A-2-U (General Agriculture) and is proposed to convert to M-1 (Light Industrial) for the purpose of an Industrial Hemp Processing facility. The project is not estimated to impact density, traffic, emissions, or any other criteria. The lot size is 44.81 acres and is located just north of the City of Calexico on Pruett Road. The parcel is vacant with a concrete structure located within the project site. As presented in the discussion of environmental checklist Sections I through XX herein, the project would have no impact, a less than significant impact, or a less than significant impact after mitigation with respect to all environmental issues.

E. General Plan Consistency: The project site is designated as Urban per the County of Imperial General Plan. Once zone is changed, the project site will develop a single structure where the hemp processing facility will be located. The Industrial Hemp Processing Facility will then be consistent with the proposed zoning and the General Plan designation. No alterations will be made outside of the parcel and project site.

Exhibit "A"
Vicinity Map

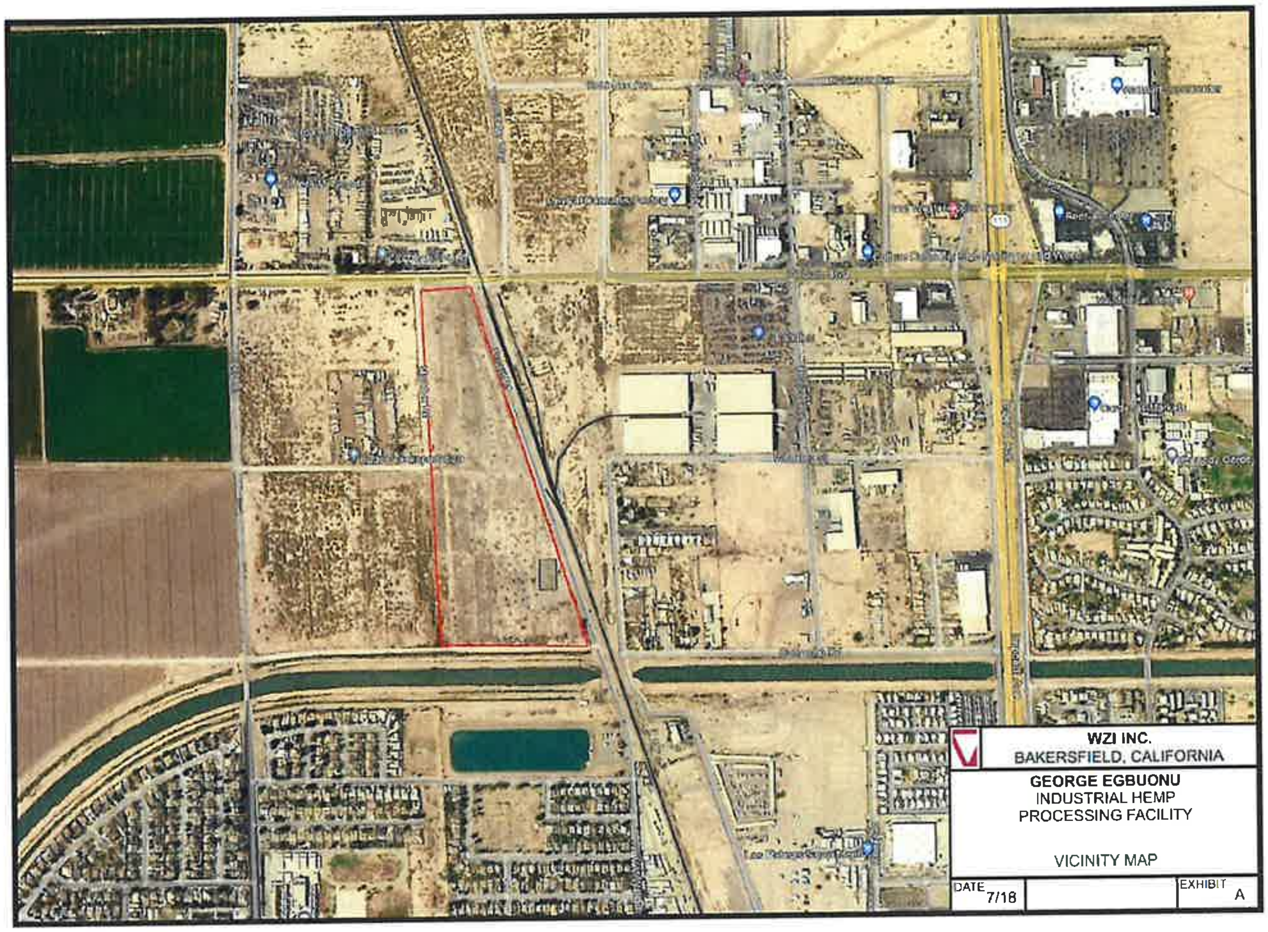

Exhibit "B"
Site Plan/Tract Map/etc.

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

I. *AESTHETICS*

Except as provided in Public Resources Code Section 21099, would the project:

	PSI	PSUMI	LTSI	NI
a) Have a substantial adverse effect on a scenic vista or scenic highway?	☐	☐	☒	☐

a) Less Than Significant Impact. The facility is not planned such that the status would change any scenic vista. There is no proposed project related intensification of use of existing elements or facilities. There are no scenic vistas in the vicinity of the project site. The proposed project will not have a substantial adverse effect on a scenic vista.

	PSI	PSUMI	LTSI	NI
b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

b) No Impact. There are no historic buildings, rock outcrops or trees that would constitute a scenic resource. The facility is not planned such that the status would change any aesthetic element. There is no proposed project related intensification of use of existing elements or facilities. The proposed project will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

	PSI	PSUMI	LTSI	NI
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surrounding? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐

c) Less Than Significant Impact. The site is not planned such that the status would change any aesthetic element. There is no proposed project related intensification of use of existing elements or facilities. The proposed project will not, in nonurbanized, areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. The project is not in an urbanized area, and as such, the proposed project will not conflict with applicable zoning and other regulations governing scenic quality.

	PSI	PSUMI	LTSI	NI
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

d) Less Than Significant Impact. The facility is not planned such that the status would change any aesthetic element. There is no proposed project related intensification of use existing elements or facilities. The proposed project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

II. *AGRICULTURE AND FOREST RESOURCES*

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. --Would the project:

	PSI	PSUMI	LTSI	NI
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐

a) Less Than Significant Impact. The proposed project consists of a zone change A-2-U (General

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

Agriculture) to M-1 (Light Industrial). However, it will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The use of the site will be a facility for the processing of agricultural hemp. Refer to **Appendix 1, California Department of Conservation Williamson Map 2016.**

	PSI	PSUMI	LTSI	NI
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☒

b) No Impact. The proposed project will not conflict with existing zoning for agricultural use, or a Williamson Act contract. The land is considered 'other land' because it is vacant and nonagricultural land surrounded by urban development and greater than 40 acres. Refer to **Appendix 1, California Department of Conservation Williamson Map 2016.** The zone change will avoid any conflicting zone issues.

	PSI	PSUMI	LTSI	NI
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒

c) No Impact. The site has no trees or active forestry on site and future uses are not planned such that the status would change. The proposed project does not intensify the use or conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)). Refer to **Appendix 1, California Department of Conservation Williamson Map 2016.**

	PSI	PSUMI	LTSI	NI
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

d) No Impact. The site has no trees or active forestry on site and future uses are not planned such that the status would change. The proposed project does not intensify the use or result in loss of forest land or conversion of forest land to non-forest use. Refer to **Appendix 1, California Department of Conservation Williamson Map 2016.**

	PSI	PSUMI	LTSI	NI
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

e) No Impact. The proposed project is in a Land Use Zone A and is not under a Williamson Act Contract. The site has no trees or active forestry on site and future uses are not planned such that the status would change. The proposed project does not intensify the use or result in loss of forest land or conversion of forest land to non-forest use. Refer to **Appendix 1, California Department of Conservation Williamson Map 2016.**

III. *AIR QUALITY*

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to the following determinations. Would the Project:

	PSI	PSUMI	LTSI	NI
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

a) Less Than Significant Impact. The proposed construction and the operation of the industrial hemp processing project does not produce air quality impacts that interfere with the threshold of current air quality plan, refer to **Appendix 2, CEQA Air Quality Handbook, (Imperial County Air Pollution Control District, 2017)** and **Appendix 4, Emission Factors.**

The proposed project will not "conflict with or obstruct implementation of the applicable air quality plan?"

Therefore, this aspect is considered to have "Less Than Significant" impact to applicable air quality plans.

Table 2. Equipment Emissions

Emission Factors	Uncontrolled /year	Controlled /year	Uncontrolled /day	Controlled /day
Grain processes[2]	Uncontrolled PM-10 Emissions (tons)	Controlled PM-10 Emissions (tons)	Uncontrolled PM-10 Emissions (lbs)	Controlled PM-10 Emissions (lbs)
Receiving	0.26078	0.1326	2.006	1.02
Shipping	0.12818	0.0663	0.986	0.51
Headhouse and internal handling	0.05304	0.007332	0.408	0.0564
Internal vibrating cleaners	0.02964	0.014508	0.228	0.1116
Grain milling - Hammermill	0.05226	0.01872	0.402	0.144
Control factor for entire process[1]		0.215514		1.6578
Total Emissions	**0.5239**	**0.23946**	**4.03**	**0.1842**
	tons/year	**tons/year**	**lbs/day**	**lbs/day**

		PSI	PSUMI	LTSI	NI
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐

b) Less Than Significant Impact. The proposed construction and the operation of the industrial hemp processing project will not have a significant net increase of any criteria pollutant. The project does not produce air quality impacts that interfere with the threshold of current air quality standards, refer to **Appendix 2, CEQA Air Quality Handbook, (Imperial County Air Pollution Control District, 2017)** and **Appendix 3, CalEEMod.**

The proposed project does not "result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?"

Therefore, this aspect is considered to have "Less Than Significant" impact on critical pollutants.

Table 3. Short-Term Emissions

2.1. Construction Emissions Compared Against Thresholds

Un/Mit.	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R
Daily, Summer (Max)																	
Unmit.	0.88	72.5	6.95	8.95	0.01	0.34	235	236	0.31	23.5	23.8		1624	1624	0.06	0.04	1.21
Mit.	0.88	72.5	6.95	8.95	0.01	0.34	235	236	0.31	23.5	23.8		1624	1624	0.06	0.04	1.21
% Reduced																	
Average Daily (Max)																	
Unmit.	0.06	1.04	0.45	0.56	< 0.005	0.02	12.8	12.8	0.02	1.28	1.3		102	102	< 0.005	< 0.005	0.03
Mit.	0.06	1.04	0.45	0.56	< 0.005	0.02	12.8	12.8	0.02	1.28	1.3		102	102	< 0.005	< 0.005	0.03
% Reduced																	
Annual (Max)																	
Unmit.	0.01	0.19	0.08	0.1	< 0.005	< 0.005	2.33	2.33	< 0.005	0.23	0.24		16.9	16.9	< 0.005	< 0.005	0.01
Mit.	0.01	0.19	0.08	0.1	< 0.005	< 0.005	2.33	2.33	< 0.005	0.23	0.24		16.9	16.9	< 0.005	< 0.005	0.01
% Reduced																	

Table 4. Long-Term Emissions

2.4. Operations Emissions Compared Against Thresholds

Un/Mit.	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R
Daily, Summer (Max)																	
Unmit.	1.28	1.88	0.68	4.93	0.01	0.03	35.3	35.3	0.03	5.34	5.37	28.9	1878	1907	3.06	0.07	8.8
Daily, Winter (Max)																	
Unmit.	0.85	1.46	0.7	2.97	0.01	0.03	35.3	35.3	0.03	5.34	5.37	28.9	1815	1544	3.06	0.07	6.82
Average Daily (Max)																	
Unmit.	0.76	1.37	0.58	2.87	0.01	0.03	25.2	25.2	0.03	3.82	3.84	28.9	1710	1739	3.05	0.06	7.39
Annual (Max)																	
Unmit.	0.14	0.25	0.11	0.52	< 0.005	< 0.005	4.6	4.6	< 0.005	0.7	0.7	4.78	283	288	0.5	0.01	1.22

		PSI	PSUMI	LTSI	NI
c)	Expose sensitive receptors to substantial pollutants concentrations?	☐	☐	☒	☐

c) Less Than Significant Impact. The proposed construction and the operation of the industrial hemp processing project will not expose sensitive receptors to substantial pollutant concentrations. The closest sensitive receptor is William Moreno Junior High School, located at 1202 Kloke Rd, Calexico, CA 92231 (0.52 miles from the project location). The daily and annual emissions are far below the emissions threshold, according to air quality standards, refer to **Appendix 2, CEQA Air Quality Handbook, (Imperial County Air Pollution Control District, 2017).** As well as **Appendix 4, Emission Factors.**

The proposed project does not "expose sensitive receptors to substantial pollutant concentrations."

Therefore, this aspect is considered to have "Less Than Significant" impact on sensitive receptors.

		PSI	PSUMI	LTSI	NI
d)	Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☒

d) Less Than Significant Impact. The proposed construction and the operation of the industrial hemp processing project will not expose sensitive receptors to substantial pollutant concentrations. The closest sensitive receptor is William Moreno Junior High School, located at 1202 Kloke Rd, Calexico, CA 92231 (0.52 miles from the project location). The daily and annual emissions are far below the emissions threshold, according to air quality standards, refer to **Appendix 2, CEQA Air Quality Handbook, (Imperial County Air Pollution Control District, 2017).** As well as **Appendix 4, Emission Factors.**

The proposed project does not "expose sensitive receptors to substantial pollutant concentrations."

Therefore, this aspect is considered to have "Less Than Significant" impact on sensitive receptors.

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNE)
Salton Sea	2022	T6 Public	Aggregated	5	DSL	3.142113579	1.18E-06	1.34E-06	3.31E-06	3.77E-05	0.007778376	1.60E-07	1.53E-0
Salton Sea	2022	T6 Public	Aggregated	10	DSL	5.228274605	1.56E-06	1.77E-06	4.50E-06	5.13E-05	0.011563693	2.30E-07	2.20E-0
Salton Sea	2022	T6 Public	Aggregated	15	DSL	13.10999035	2.32E-06	2.64E-06	7.91E-06	8.32E-05	0.024100543	3.83E-07	3.66E-0
Salton Sea	2022	T6 Public	Aggregated	20	DSL	20.73248213	2.32E-06	2.64E-06	9.07E-06	9.67E-05	0.032870286	4.64E-07	4.44E-0
Salton Sea	2022	T6 Public	Aggregated	25	DSL	105.9081999	8.49E-06	9.66E-06	3.47E-05	0.000383612	0.153475916	1.88E-06	1.80E-0
Salton Sea	2022	T6 Public	Aggregated	30	DSL	320.6990708	1.94E-05	2.21E-05	7.99E-05	0.000995984	0.438229825	4.93E-06	4.72E-0
Salton Sea	2022	T6 Public	Aggregated	35	DSL	366.2872134	1.70E-05	1.94E-05	7.00E-05	0.001034881	0.476593902	5.14E-06	4.92E-0
Salton Sea	2022	T6 Public	Aggregated	40	DSL	640.6949706	2.25E-05	2.56E-05	9.37E-05	0.001584384	0.799116144	8.01E-06	7.67E-0
Salton Sea	2022	T6 Public	Aggregated	45	DSL	698.9256645	1.96E-05	2.24E-05	8.07E-05	0.001696913	0.841712239	8.87E-06	8.49E-0
Salton Sea	2022	T6 Public	Aggregated	50	DSL	925.4620217	2.12E-05	2.41E-05	8.54E-05	0.002159783	1.081684791	1.20E-05	1.15E-0
Salton Sea	2022	T6 Public	Aggregated	55	DSL	1994.642552	3.87E-05	4.40E-05	0.000150401	0.004460365	2.273600387	2.69E-05	2.57E-0
Salton Sea	2022	T6 Public	Aggregated	60	DSL	1169.040662	2.39E-05	2.72E-05	8.75E-05	0.003070679	1.321374263	1.92E-05	1.83E-0
Salton Sea	2022	T6 Public	Aggregated	65	DSL	3741.782408	6.74E-05	7.67E-05	0.000256033	0.008083895	4.217951164	5.11E-05	4.89E-0
Salton Sea	2022	T6 Public	Aggregated	70	DSL	888.9820297	1.94E-05	2.21E-05	6.97E-05	0.002577105	1.006349006	1.59E-05	1.53E-0
Salton Sea	2022	T6 Public	Aggregated	75	DSL	0	0	0	0	0	0	0	
Salton Sea	2022	T6 Public	Aggregated	80	DSL	0	0	0	0	0	0	0	
Salton Sea	2022	T6 Public	Aggregated	85	DSL	0	0	0	0	0	0	0	
Salton Sea	2022	T6 Public	Aggregated	90	DSL	0	0	0	0	0	0	0	
Salton Sea	2022	T7 Public	Aggregated	5	DSL	3.243784356	2.31E-06	2.63E-06	7.19E-06	7.26E-05	0.011465648	3.49E-07	3.34E-0
Salton Sea	2022	T7 Public	Aggregated	10	DSL	6.14131672	3.33E-06	3.79E-06	1.12E-05	0.000108066	0.019277439	5.24E-07	5.01E-0
Salton Sea	2022	T7 Public	Aggregated	15	DSL	11.58745319	4.20E-06	4.78E-06	1.54E-05	0.000153948	0.030938759	8.56E-07	8.19E-0
Salton Sea	2022	T7 Public	Aggregated	20	DSL	20.38838774	4.27E-06	4.86E-06	1.98E-05	0.000191207	0.046047018	1.01E-06	9.65E-0
Salton Sea	2022	T7 Public	Aggregated	25	DSL	104.5658486	1.67E-05	1.90E-05	7.93E-05	0.000928093	0.218086432	4.92E-06	4.71E-0
Salton Sea	2022	T7 Public	Aggregated	30	DSL	301.7394139	3.88E-05	4.41E-05	0.000182466	0.002630945	0.597409996	1.35E-05	1.30E-0
Salton Sea	2022	T7 Public	Aggregated	35	DSL	347.1042163	3.50E-05	3.99E-05	0.000166254	0.002861101	0.652984518	1.41E-05	1.35E-0
Salton Sea	2022	T7 Public	Aggregated	40	DSL	537.2761609	4.62E-05	5.26E-05	0.000215497	0.004756245	0.979730114	2.28E-05	2.18E-0
Salton Sea	2022	T7 Public	Aggregated	45	DSL	635.3461856	4.45E-05	5.06E-05	0.000205785	0.005327582	1.11400427	2.52E-05	2.41E-0
Salton Sea	2022	T7 Public	Aggregated	50	DSL	827.9826725	5.12E-05	5.83E-05	0.000228029	0.007041599	1.415501576	3.39E-05	3.24E-0
Salton Sea	2022	T7 Public	Aggregated	55	DSL	1657.722719	9.87E-05	0.000112404	0.000410247	0.014835482	2.793788863	7.48E-05	7.16E-0
Salton Sea	2022	T7 Public	Aggregated	60	DSL	1224.505563	5.89E-05	6.71E-05	0.000245191	0.008514101	1.99141133	4.46E-05	4.27E-0
Salton Sea	2022	T7 Public	Aggregated	65	DSL	3657.673111	0.000223985	0.00025499	0.000885334	0.034411853	6.153464692	0.000178858	0.00017112
Salton Sea	2022	T7 Public	Aggregated	70	DSL	1444.331922	5.93E-05	6.75E-05	0.000256545	0.008164247	2.305131175	4.29E-05	4.11E-0
Salton Sea	2022	T7 Public	Aggregated	75	DSL	0	0	0	0	0	0	0	
Salton Sea	2022	T7 Public	Aggregated	80	DSL	0	0	0	0	0	0	0	
Salton Sea	2022	T7 Public	Aggregated	85	DSL	0	0	0	0	0	0	0	
Salton Sea	2022	T7 Public	Aggregated	90	DSL	0	0	0	0	0	0	0	

Table 5. EMFAC Mobile Emissions

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

IV. ***BIOLOGICAL RESOURCES*** ***Would the project:***

	PSI	PSUMI	LTSI	NI
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

a) No Impact. The proposed project is in an area with high disturbance. No adverse impact is expected either directly or through habitat modification on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. Refer to **Appendix 5, Biological Resource Report.**

	PSI	PSUMI	LTSI	NI
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐

b) No Impact. There is no unmanaged riparian habitat or sensitive community on the established baseline nor is any proposed project element capable of creating a riparian element. Due to the high level of existing disturbance found on the project site the proposed project will not intensify the use or create a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. Refer to **Appendix 5, Biological Resource Report.**

	PSI	PSUMI	LTSI	NI
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

c) No Impact. There are no unmanaged protected wetlands on the established baseline nor is any proposed project element capable of creating a wetland element. Due to the high level of existing disturbance found on the project site the proposed project will not intensify the use or create a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. Refer to **Appendix 5, Biological Resource Report.**

	PSI	PSUMI	LTSI	NI
d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

d) No Impact. The proposed project is in a predominately developed community. As a result of these existing barriers, the project will not interfere substantially with the currently restricted movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. Refer to **Appendix 5, Biological Resource Report.**

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
e) Conflict with any local policies or ordinance protecting biological resource, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

e) No Impact. Due to the high level of existing but locally managed disturbance found on the project site the proposed project will not intensify the use or conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Refer to **Appendix 5, Biological Resource Report.**

	PSI	PSUMI	LTSI	NI
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

f) No Impact. Due to the high level of existing but locally managed disturbance found on the project site the proposed project will not intensify the use or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Refer to **Appendix 5, Biological Resource Report.**

V. ***CULTURAL RESOURCES Would the project:***

	PSI	PSUMI	LTSI	NI
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒

a) No Impact. The proposed project will not cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5. A cultural investigation was undertaken but did not identify any resources that may be impacted by the project. Refer to **Appendix 6, Cultural Resources Survey Report.**

	PSI	PSUMI	LTSI	NI
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒

b) No Impact. The proposed project will not cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5. A pedestrian survey was conducted, which resulted in no previously or newly recorded resources identified within the project site. Refer to **Appendix 6, Cultural Resources Survey Report.**

	PSI	PSUMI	LTSI	NI
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

c) No Impact. The project will not disturb any human remains, including those interred outside of dedicated cemeteries. Twenty cultural studies were previously conducted within a one-mile radius of the project site. No recorded resources identified within the project site. Refer to **Appendix 6, Cultural Resources Survey Report.**

VI. ***ENERGY Would the project:***

	PSI	PSUMI	LTSI	NI
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

a) Less Than Significant Impact. The proposed project will consist of new equipment that will be in compliance with efficiency requirements. It will operate only Monday-Friday from 9am-5pm and will result in 95% clean product. It will not result in significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Refer to **Appendix 10,**

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

Fiber Track Energy Specs.

	PSI	PSUMI	LTSI	NI
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

b) Less Than Significant Impact. The proposed project will not alter the available footprint for projects such as solar farms. Additionally, new equipment will be in compliance with CEC Title 24 efficiency requirements. The proposed project does not "[c]onflict with or obstruct a state or local plan for renewable energy or energy efficiency." Refer to **Appendix 10, Fiber Track Energy Specs.**

VII. ***GEOLOGY AND SOILS Would the project:***

	PSI	PSUMI	LTSI	NI
a) Directly or indirectly cause potential substantial adverse effects, including risk of loss, injury, or death involving:	☐	☐	☒	☐
1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐

1) Refer below:

	PSI	PSUMI	LTSI	NI
2) Strong Seismic ground shaking?	☐	☐	☒	☐

2) Less Than Significant Impact. Due to the location's close proximity to active fault zones based on the CGS (California Geological Survey) Fault Zone Map, the (Mount Signal Fault Zone) which is approximately 10 east/south-east, and the (Calexico Fault Zone) which is approximately 6 miles west/north-west, there is a likelihood of ground shaking due to fault movement. Refer to **Exhibit G, Close Proximity Fault Map.** Project equipment will be designed and anchored according to current building and seismic code.

	PSI	PSUMI	LTSI	NI
3) Seismic-related ground failure, including liquefaction and seiche/tsunami?	☐	☐	☒	☐

3) Less Than Significant Impact. There is no evidence to suggest the possibility ground related failure such as liquification based on the CGS (California Geological Survey) Liquification Zones Map. Refer to **Exhibit G, Close Proximity Fault Map** and **Exhibit J, Liquefaction Map.**

	PSI	PSUMI	LTSI	NI
4) Landslides?	☐	☐	☒	☐

4) Less Than Significant Impact. There is no evidence to support the likelihood of landslides based on the CGS (California Geological Survey) Landslide Zones map. Refer to **Exhibits F-G, Soil and Fault Maps.**

	PSI	PSUMI	LTSI	NI
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

b) Less Than Significant Impact. There is no evidence to suggest substantial soil erosion or the loss of topsoil. This is further supported by the close proximity of residential, commercial, and agricultural land in the immediate area. Refer to **Exhibits F-G, Soil and Fault Maps.**

	PSI	PSUMI	LTSI	NI
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading,	☐	☐	☒	☐

subsidence, liquefaction or collapse?

c) Less Than Significant Impact. The location is not located on a unstable geologic unit or soil that is unstable, the locations close proximity to residential and commercial areas further support that there is no evidence to suggest the surface geologic unit and/or soil is unstable and will not be at risk of in or off site landslides, lateral spreading, subsistence, liquefaction, or collapse. Refer to **Exhibits F-G, Soil and Fault Maps.**

	PSI	PSUMI	LTSI	NI
d) Be located on expansive soil, as defined in the latest Uniform Building Code, creating substantial direct or indirect risk to life or property?	☐	☐	☒	☐

d) Less Than Significant Impact. The location is not located on expansive soil as defined by Table 18-1-B of the Uniform Building Code (1994) and will no create substantial risks to life or property. This is further supported by the location's close proximity to residential, commercial, and agricultural land. Refer to **Exhibits F-G, Soil and Fault Maps.**

	PSI	PSUMI	LTSI	NI
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐

e) Less Than Significant Impact. The location is capable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in the event of a sewer system not being available. Due to close proximity to residential areas further supports this location is suitable for septic tanks or alternative wastewater disposal systems if a sewer system is not implemented. Refer to **Exhibits F-G, Soil and Fault Maps.**

	PSI	PSUMI	LTSI	NI
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

f) No Impact. The project site is not located near paleontological resources and does not contain unique geologic features. Refer to **Appendix 6, Cultural Resources Survey Report.**

VIII. ***GREENHOUSE GAS EMISSION*** ***Would the project:***

	PSI	PSUMI	LTSI	NI
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

a) Less Than Significant Impact. The project will not generate a significant level of greenhouse gas emissions. The total operational greenhouse gas emissions are estimated to be 1,373 metric tons CO2e. These emissions represent a *de-minimis* increase in greenhouse gas emissions. Previous CEQA documents in Imperial County have proposed a significance threshold of 10,000 MT CO2e/year. This project's emissions fall far below that level. Additionally, this project creates efficiencies by processing the hemp material in proximity to the growing region. Although these efficiencies are not quantified in this initial study, it is likely that the project may represent a net GHG reduction. This project will also meet all State GHG reduction targets. All the GHG emissions are from mobile sources and indirect emissions from energy use. Therefore, all the sources are captured in mandated GHG reduction programs including truck efficiency standards, Low Carbon Fuel Standard, Renewable Portfolio Standard, and others. There are no GHG emissions generated by this project that are not covered by mandatory reduction programs to meet state goals. Refer to **Appendix 3, CalEEMod** and **Appendix 4, Emission Factors.**

	PSI	PSUMI	LTSI	NI
b) Conflict with an applicable plan or policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

b) Less Than Significant Impact. The project will not conflict with any applicable plan, policy or

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

regulation adopted for the purpose of reducing greenhouse gas emissions. As stated above, the project will comply with state-level GHG reduction measures. A review of the Imperial County Regional Climate Action Plan[1] was conducted to determine project conformance with the plan. The project has no features that conflict with the measures introduced in the plan for either the City of Calexico, or Imperial County.

IX. ***HAZARDS AND HAZARDOUS MATERIALS*** ***Would the project:***

	PSI	PSUMI	LTSI	NI
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐

a) Less Than Significant Impact. The proposed project activities will remain as those in the site plan and will be subject to the same regulatory oversight reflected in the site plan. There is no proposed project related intensification of activities or facilities. The facility is not expected to generate or use hazardous wastes or materials. A minimal quantity of waste may be generated from maintenance activities but will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

	PSI	PSUMI	LTSI	NI
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

b) Less Than Significant Impact. Due to minimal waste generation and hazardous materials proposed for the project site, the proposed project will not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The project will comply with all waste management requirements including spill plans and hazardous materials business plans, as required by the responsible Imperial County agency.

	PSI	PSUMI	LTSI	NI
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐

c) Less Than Significant Impact. The proposed project activities will remain as those in the baseline; the nearest school (William Moreno Junior High School) was over 12,000 feet away. There is no proposed project related intensification of activities or facilities. The proposed project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

	PSI	PSUMI	LTSI	NI
d) Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

d) No Impact. The proposed project is not located on a site, which is included on a list of hazardous materials sites. According to Cortese List Data Resources from CalEPA, there are no hazard sites within the project site.

	PSI	PSUMI	LTSI	NI
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the	☐	☐	☐	☒

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[1] Reference:

- Imperial County Regional Climate Action Plan, 2021.

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

project area?

e) No Impact. The proposed project is not located within an airport land use plan.

	PSI	PSUMI	LTSI	NI
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

f) Less Than Significant Impact. The proposed project does not represent a significant increase in activity or hazardous materials generation over the baseline condition. The proposed project will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

	PSI	PSUMI	LTSI	NI
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

g) No Impact. The proposed project is not situated in a location that is at a high risk of wild land fires. The project site is currently fallow agriculture, and is surrounded by agricultural, industrial, and residential uses. The project does not present a risk to expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wild land fires.

X. *HYDROLOGY AND WATER QUALITY* ***Would the project:***

	PSI	PSUMI	LTSI	NI
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐

a) Less Than Significant Impact. The proposed project does not discharge any wastes that may impact surface or groundwater quality. On-site restroom wastes will be disposed of via septic system, which are regulated by the local County agency to ensure prevention of discharge to groundwater or the City of Calexico wastewater collection system. No other waste discharges are planned for the site.

	PSI	PSUMI	LTSI	NI
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

b) Less Than Significant Impact. The proposed project will use municipal water supply and will have no impact to groundwater supplies or recharge.

	PSI	PSUMI	LTSI	NI
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
(i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
(iii) create or contribute runoff water which would exceed	☐	☐	☒	☐

	Potentially Significant Impact **(PSI)**	Potentially Significant Unless Mitigation Incorporated **(PSUMI)**	Less Than Significant Impact **(LTSI)**	No Impact **(NI)**
the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or;				
(iv) impede or redirect flood flows?	☐	☐	☒	☐

c) (i-iv) Less Than Significant Impact. The proposed project will not alter the drainage of the site or area. Minimal site work is anticipated during the construction phase, and the existing drainage characteristics of the site will not be altered. All applicable stormwater management regulations will be followed during construction and operations.

	PSI	PSUMI	LTSI	NI
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

d) No Impact. The proposed project is not in a flood hazard, tsunami, or seiche zone. All applicable hazardous materials and spill planning requirements will be followed to minimize any risk of release of pollutants. The site is about 100 miles from a tsunami zone off of the US coast and 0.9 miles from the closest flood zone. Refer to **Exhibit C, City Flood Map, Exhibit D, County Flood Zone Map,** and **Exhibit E, Tsunami Hazard Map.**

	PSI	PSUMI	LTSI	NI
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

e) No Impact. The proposed project will use municipal water supply and will have no impact to water quality control plans or groundwater management plans.

XI. *LAND USE AND PLANNING Would the project:*

	PSI	PSUMI	LTSI	NI
a) Physically divide an established community?	☐	☐	☐	☒

a) No Impact. The proposed project will not intensify the use or affect the area's status such that it would "physically divide an established community."

	PSI	PSUMI	LTSI	NI
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

b) Less Than Significant Impact. The proposed project will not intensify the use or affect the area's status such that the proposed project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

XII. *MINERAL RESOURCES Would the project:*

	PSI	PSUMI	LTSI	NI
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

a) No Impact. The proposed project site has no known surface mineral resources of value. The project surface activities will not prevent the development of any subsurface oil and gas resources that may or may not exist on the site.

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

b) No Impact. The proposed project is not located on a locally important mineral resource recovery site.

XIII. ***NOISE*** ***Would the project result in:***

	PSI	PSUMI	LTSI	NI
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

a) Less Than Significant Impact. The proposed project will be constructed inside an existing building structure. Operation of some equipment may require Hearing Protection to conform to OSHA regulations. Equipment noise levels have been assessed and the building Sound Transmission Losses. Noise levels from equipment will be attenuated to background before reaching off-site receptors on the far side of Pruett Road and the adjacent railroad tracks. Refer to **Appendix 7, Noise Element** and **Appendix 8, Practical Solutions to Noise Problems.**

	PSI	PSUMI	LTSI	NI
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

b) Less Than Significant Impact. **Less Than Significant Impact**. The proposed project will be constructed inside an existing building structure. All processing elements are set on suitable foundations. Refer to **Appendix 7, Noise Element** and **Appendix 8, Practical Solutions to Noise Problems.**

	PSI	PSUMI	LTSI	NI
c) For a project located within the vicinity of a private airstrip or an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

c) Less Than Significant Impact. The proposed project is located within two miles of the Calexico International Airport and approximate one-half mile of the Airport Compatibility Zone C.

XIV. ***POPULATION AND HOUSING*** ***Would the project:***

	PSI	PSUMI	LTSI	NI
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐

a) Less Than Significant Impact. There is no proposed project related intensification of population, housing or community-related elements or facilities. The proposed project will not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

	PSI	PSUMI	LTSI	NI
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

b) No Impact. There is no proposed project related intensification of population, housing or community-related elements or facilities. The proposed project will not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

elsewhere.

XV. ***PUBLIC SERVICES***

	PSI	PSUMI	LTSI	NI
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☒	☐
1) Fire Protection?	☐	☐	☒	☐

a1) Less Than Significant Impact. The proposed project will rely on the regionally available public services and no new activities or elements are planned such that the status would change. There is no proposed project related intensification of government-related elements or facilities. The proposed project will not induce growth of demand for services provided by government agencies such as Fire, Police, Schools, Parks or other similar services in an area.

	PSI	PSUMI	LTSI	NI
2) Police Protection?	☐	☐	☒	☐

2) See above.

	PSI	PSUMI	LTSI	NI
3) Schools?	☐	☐	☐	☒

3) No Impact. Intensification of use of these types of facilities will be prompted by this implementation of this project.

	PSI	PSUMI	LTSI	NI
4) Parks?	☐	☐	☐	☒

4) No Impact. Intensification of use of these types of facilities will be prompted by this implementation of this project.

	PSI	PSUMI	LTSI	NI
5) Other Public Facilities?	☐	☐	☒	☐

5) See above.

XVI. ***RECREATION***

	PSI	PSUMI	LTSI	NI
a) Would the project increase the use of the existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

a) No Impact. No new activities or intensification elements are planned such the status would change. There is no proposed project related intensification of recreation-related elements, facilities, or employees. The proposed project will not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

	PSI	PSUMI	LTSI	NI
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment?	☐	☐	☐	☒

b) No Impact. No new activities or elements are planned such that the status would change.

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

There is no proposed project related intensification of recreation-related elements or facilities. The proposed project does not include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

XVII. ***TRANSPORTATION*** ***Would the project:***

		PSI	PSUMI	LTSI	NI
a)	Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐

a) Less Than Significant Impact. There is no proposed project related intensification of transit, roadway, bicycle or pedestrian-related elements or facilities. The proposed project will not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The project estimates minimal amount of traffic with one to two trucks entering and leaving the facility per day, with an inbound trip of 50 miles and an outbound trip of 500 miles. Refer to Table 6 for VMT calculations.

		PSI	PSUMI	LTSI	NI
b)	Would the project conflict or be inconsistent with the CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐

b) Less Than Significant Impact. There is no proposed project related intensification of transit-, roadway-, bicycle- or pedestrian-related elements or facilities. The proposed project will not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

		PSI	PSUMI	LTSI	NI
c)	Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐

c) Less Than Significant Impact. There is no proposed project related intensification of transit-, roadway-, bicycle- or pedestrian-related elements or facilities. The proposed project will not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

		PSI	PSUMI	LTSI	NI
d)	Result in inadequate emergency access?	☐	☐	☒	☐

d) Less Than Significant Impact. There is no proposed project related intensification of transit, roadway, bicycle or pedestrian-related elements or facilities. The proposed project will not result in intensification of use and therefore inadequate emergency access.

Table 6. VMT Calculations

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

Number of Trucks	Number of trips per day	Max Trip Length (Miles)	Daily Trips (VMT/Day)	Max Days Operated Per Year (Days/Year)	Max VMT/Year
Truck 1	1	550	550	260	143000
Truck 2	1	550	550	260	143000
Truck VMT/yr	286000				
*Project is not expected to induce traffic. A maximum of two trucks would be entering and leaving the project site per day.					
Number of Employees	**Number of Trips per Day**	**Max Trip Length (Miles)**	**Daily Trips (VMT/Day)**	**Max Days Worked Per Year (Days/Year)**	**Max VMT/year**
Employee 1	1	6	6	260	1560
Employee 2	1	6	6	260	1560
Employee 3	1	6	6	260	1560
Employee 4	1	6	6	260	1560
Employee 5	1	6	6	260	1560
Employee VMT/Yr	7800				
*Estimated VMT using the City of Calexico City Limits, which the furthest point is about 3 miles. *Assuming the employee lives in the furthest point of the City of Calexico, so VMT accounts for inbound and outbound of the facility.					
TotaL VMT/Yr	293800				

XVIII. *TRIBAL CULTURAL RESOURCES*

	PSI	PSUMI	LTSI	NI
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place or object with cultural value to a California Native American tribe, and that is:	☐	☐	☐	☒
(i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as define in Public Resources Code Section 5020.1(k), or **(i)**	☐	☐	☐	☒
b) (ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth is subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe. **(ii)**	☐	☐	☐	☒

a) (i,ii) No Impact. The proposed project has recently been surveyed for cultural significance, Appendix 6, Cultural Resource Survey Report. No listed sites or sites eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code section 5020.1(k) were identified in the survey. No additional land disturbance or intensification of use of the site will occur from the project. Since no cultural resources were discovered within the Hemp Processing Facility project or in its immediate vicinity, no impact to a California Native American tribe of a significant resource can occur.

XIX. *UTILITIES AND SERVICE SYSTEMS* ***Would the project:***

	PSI	PSUMI	LTSI	NI
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐

a) Less Than Significant Impact. The site has no community elements onsite, and none are planned such that the status would change. There is no proposed project related intensification of population, housing or community-related elements or facilities. The proposed project is not expected to result in the relocation or construction of a new or expand water, wastewater treatment or stormwater drainage, electrical power, natural gas or telecommunication facility.

	PSI	PSUMI	LTSI	NI
b) Have sufficient water supplies available to serve the project from existing and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐

b) Less Than Significant Impact. The property already has a water gate and meter serviced by Imperial Irrigation District (IID). There is no proposed project related intensification of water supply-related elements or facilities. The proposed project will have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

	PSI	PSUMI	LTSI	NI
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐

c) Less Than Significant Impact. The nearest community with wastewater treatment is the Imperial Irrigation District. There is no proposed project related intensification of wastewater-related elements or facilities. The proposed project will result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

	PSI	PSUMI	LTSI	NI
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐

d) Less Than Significant Impact. The project is not expected to generate significant quantities of solid waste.

	PSI	PSUMI	LTSI	NI
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

e) Less Than Significant Impact. The project will comply with all applicable federal, state, and local management and reduction statues and regulations related to solid waste.

XX. *WILDFIRE*

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:

	PSI	PSUMI	LTSI	NI
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

a) No Impact. The proposed project is not in a high fire severity zone. It will not substantially impair an adopted emergency response plan or emergency evacuation plan. The site is located right outside of Calexico, CA; there are no fire hazard severity zones found in that area. Refer to Exhibit O, Fire Hazard Severity Zone Map.

	PSI	PSUMI	LTSI	NI
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒

b) No Impact. The project is not in a high fire severity zone or in a state responsibility area. Refer

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

to Exhibit O, Fire Hazard Severity Zone Map.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒

c) No Impact. The proposed project is located in an area where there are associated infrastructures in place. Additionally, the site is not located in a high fire hazard severity zone, refer to Exhibit O, Fire Hazard Severity Zone Map.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

d) No Impact. The project is not in a high fire severity zone or in a state responsibility area. Refer to Exhibit O, Fire Hazard Severity Zone Map.

Note: Authority cited: Sections 21083 and 21083.05, Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21093, 21094, 21095, and 21151, Public Resources Code; Sundstrom v. County of Mendocino,(1988) 202 Cal.App.3d 296; Leonoff v. Monterey Board of Supervisors, (1990) 222 Cal.App.3d 1337; Eureka Citizens for Responsible Govt. v. City of Eureka (2007) 147 Cal.App.4th 357; Protect the Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal.App.4th at 1109; San Franciscans Upholding the Downtown Plan v. City and County of San Francisco (2002) 102 Cal.App.4th 656.

Revised 2009- CEQA
Revised 2011- ICPDS
Revised 2016 – ICPDS
Revised 2017 – ICPDS
Revised 2019 – ICPDS

	Potentially Significant Impact (PSI)	Potentially Significant Unless Mitigation Incorporated (PSUMI)	Less Than Significant Impact (LTSI)	No Impact (NI)

SECTION 3
III. MANDATORY FINDINGS OF SIGNIFICANCE

The following are Mandatory Findings of Significance in accordance with Section 15065 of the CEQA Guidelines.

	PSI	PSUMI	LTSI	NI
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, eliminate tribal cultural resources or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☐	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☐

IV. PERSONS AND ORGANIZATIONS CONSULTED

This section identifies those persons who prepared or contributed to preparation of this document. This section is prepared in accordance with Section 15129 of the CEQA Guidelines.

A. COUNTY OF IMPERIAL

- Jim Minnick, Director of Planning & Development Services
- Michael Abraham, AICP, Assistant Director of Planning & Development Services
- Diana Robinson, Planning Division Manager
- Imperial County Air Pollution Control District
- Department of Public Works
- Fire Department
- Ag Commissioner
- Environmental Health Services
- Sheriff's Office

B. OTHER AGENCIES/ORGANIZATIONS

(Written or oral comments received on the checklist prior to circulation)

V. REFERENCES

1. "County of Imperial General Plan EIR", prepared by Brian F. Mooney & Associates in 1993; and as Amended by County in 1996, 1998, 2001, 2003, 2006 & 2008, 2015, 2016.
2. Air Quality and Greenhouse Gas Report, WZI Inc., June 2022
3. California Department of Conservation Williamson Act, 2016
4. Biological Resource Survey, Barrett Biological Enterprise, Inc., June 2022
5. Cultural Resources Survey Report, Tierra Environmental Services, June 2022
6. Imperial County General Plan Seismic/Public Safety Element
7. Imperial County General Plan Noise Element
8. Noise Report/Tables, WZI Inc., June 2022
9. Fire Hazard Severity Zone Map, California Department of Forestry. Available at https://egis.fire.ca.gov/FHSZ/
10. Geology, California Geological Survey.

VI. NEGATIVE DECLARATION – County of Imperial

The following Negative Declaration is being circulated for public review in accordance with the California Environmental Quality Act Section 21091 and 21092 of the Public Resources Code.

Project Name: Zone Change (ZC) #21-0004, Initial Study #21-0031

Project Applicant:

Salton Group, LLC
2711 N. Sepulveda Blvd Ste 233
Manhattan Beach CA 90266

Project Location: 551 Pruett Road, Calexico CA 92231

APN: 058-010-052

Description of Project: As proposed, the proposed project consists of a zone change from A-2-U (General Agriculture) to M-1 (Light Industrial) for the proposed use of Industrial Hemp Processing in APN 058-010-052. The parcel is roughly 44.81 acres just north of the city of Calexico.

The intent of the zone change in Imperial County is for the proposed use of Industrial Hemp Processing.
The project will process the stalk of grain hemp through decortication, which is the removal of the outer layer or cortex from the structure. Hemp stalk does not contain any THC content and is of the grain or fiber type varieties, ideal for industrial hemp processing. After removing the fibrous exterior of the stalk from the hurd material and running through a series of separation machines, the products are then processed for different applications such as, but not limited to, fiber boards, press wood, ropes, hempcrete, carpets, etc. These products are bast fiber and hurd fiber.

Through this project, it is estimated that over twenty-five jobs will be created. The proposed source of hemp will derive from farmers in Imperial County and the sale of the finish hemp products will be within 500 miles from the facility. The proposed hours of operations are Monday-Friday from 9am - 5pm. In addition, daily traffic is estimated to be low and will consist of one or two trucks per day entering and leaving the facility.

Upon zone change approval, registering with the California Department of Food and Agriculture Market Enforcement Branch, obtaining a processing license, and acquiring application forms for submission must be completed prior to commencing operations.

VII. FINDINGS

This is to advise that the County of Imperial, acting as the lead agency, has conducted an Initial Study to determine if the project may have a significant effect on the environment and is proposing this Negative Declaration based upon the following findings:

☐ The Initial Study shows that there is no substantial evidence that the project may have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

☐ The Initial Study identifies potentially significant effects but:

(1) Proposals made or agreed to by the applicant before this proposed Mitigated Negative Declaration was released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur.

(2) There is no substantial evidence before the agency that the project may have a significant effect on the environment.

(3) Mitigation measures are required to ensure all potentially significant impacts are reduced to levels of insignificance.

A MITIGATED NEGATIVE DECLARATION will be prepared.

If adopted, the Negative Declaration means that an Environmental Impact Report will not be required. Reasons to support this finding are included in the attached Initial Study. The project file and all related documents are available for review at the County of Imperial, Planning & Development Services Department, 801 Main Street, El Centro, CA 92243 (442) 265-1736.

NOTICE

The public is invited to comment on the proposed Negative Declaration during the review period.

Date of Determination Jim Minnick, Director of Planning & Development Services

The Applicant hereby acknowledges and accepts the results of the Environmental Evaluation Committee (EEC) and hereby agrees to implement all Mitigation Measures, if applicable, as outlined in the MMRP.

Applicant Signature Date

SECTION 4

VIII. RESPONSE TO COMMENTS

(ATTACH DOCUMENTS, IF ANY, HERE)

IX. MITIGATION MONITORING & REPORTING PROGRAM (MMRP)

(ATTACH DOCUMENTS, IF ANY, HERE)

EXHIBITS

Exhibit A

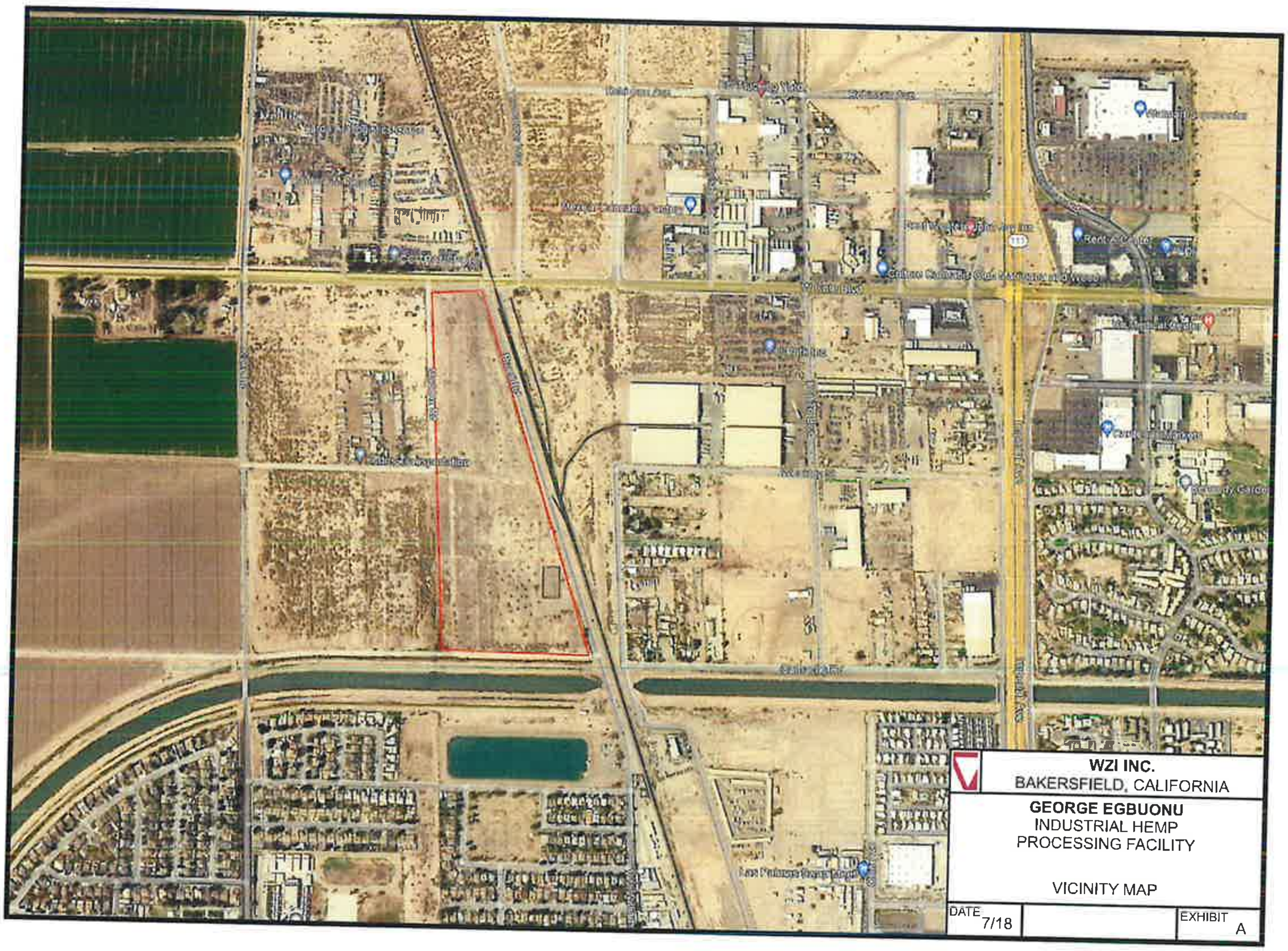
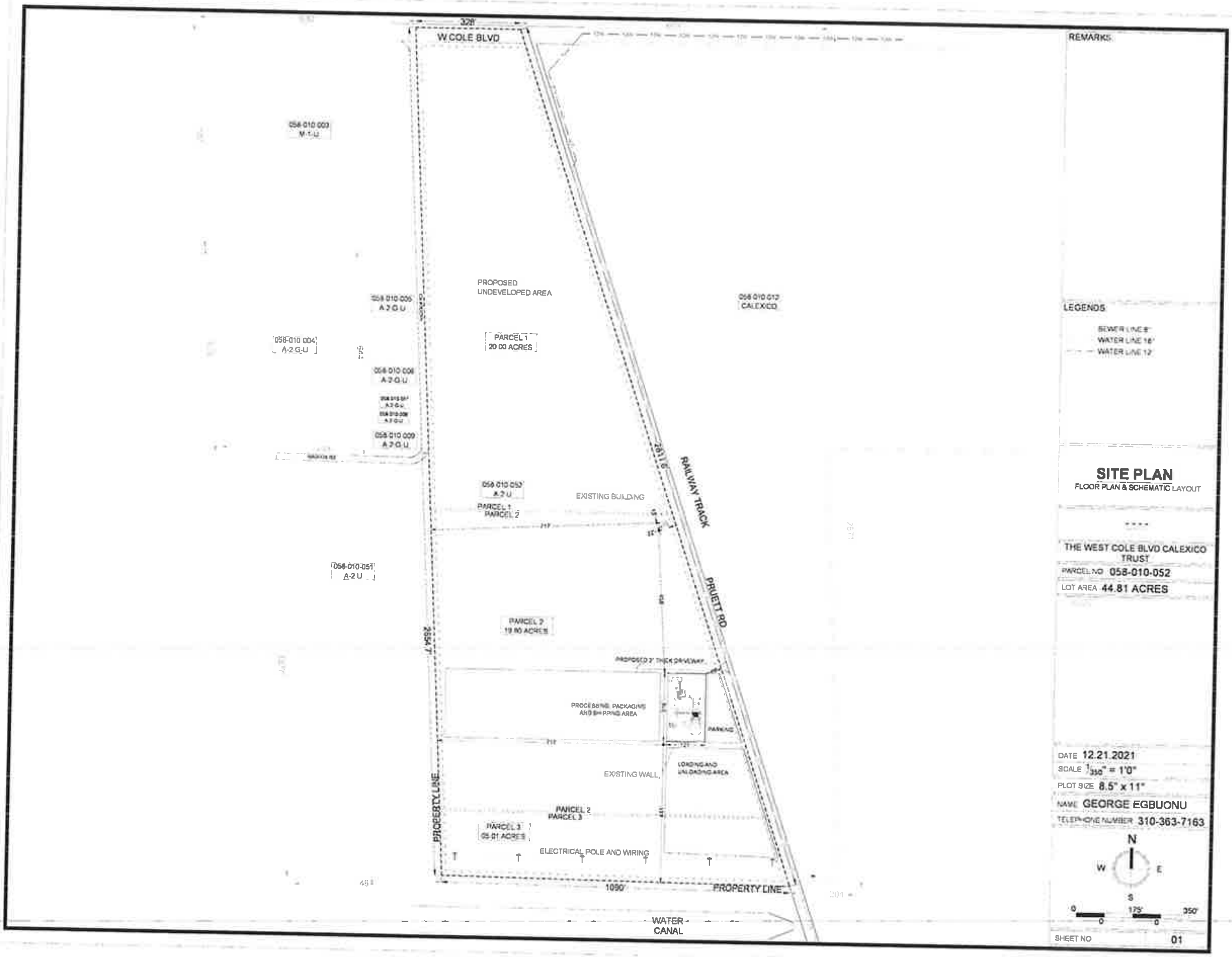
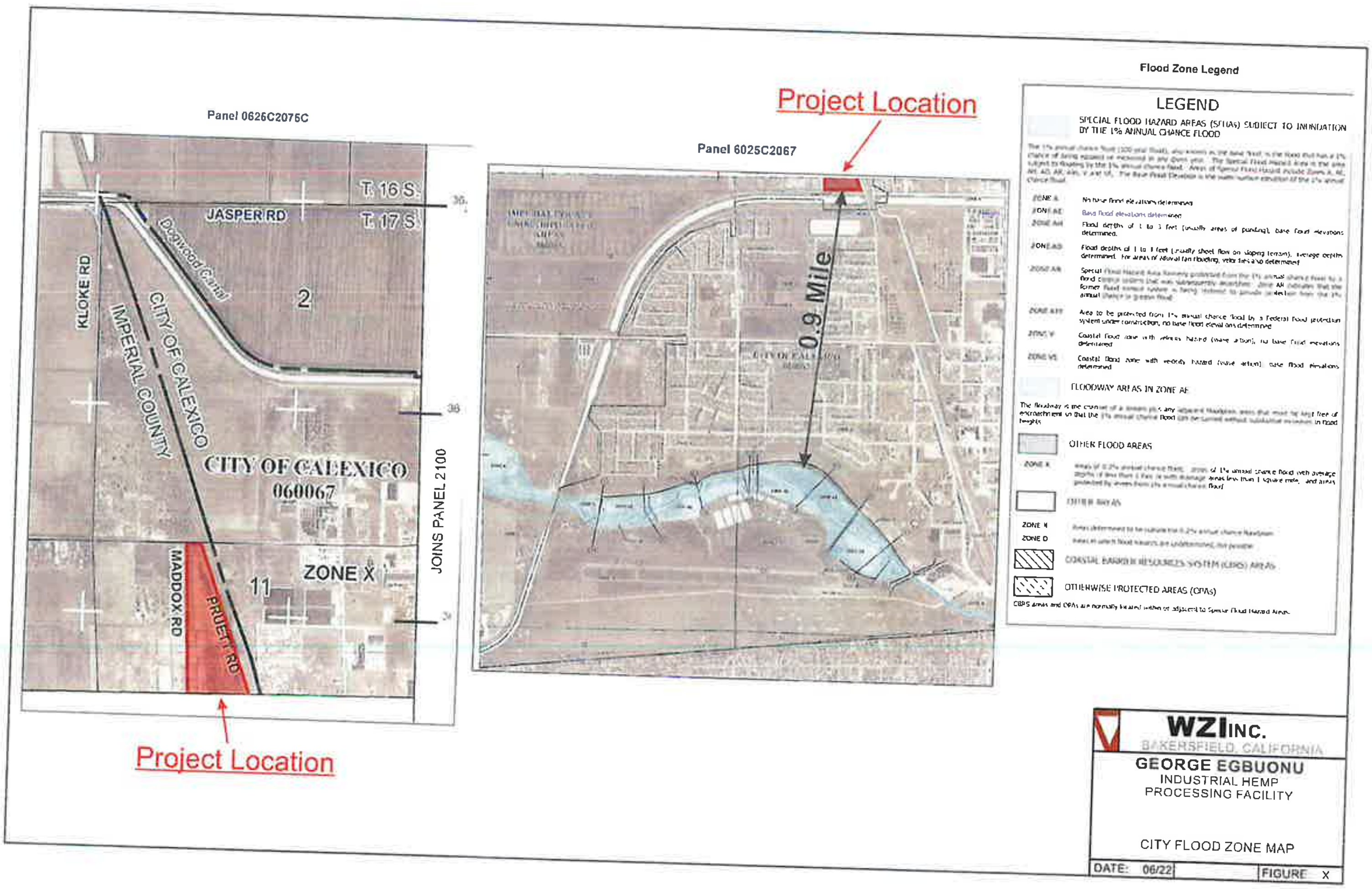

WZI INC.
BAKERSFIELD, CALIFORNIA
GEORGE EGBUONU
INDUSTRIAL HEMP
PROCESSING FACILITY
VICINITY MAP
DATE 7/18
EXHIBIT A

Exhibit B



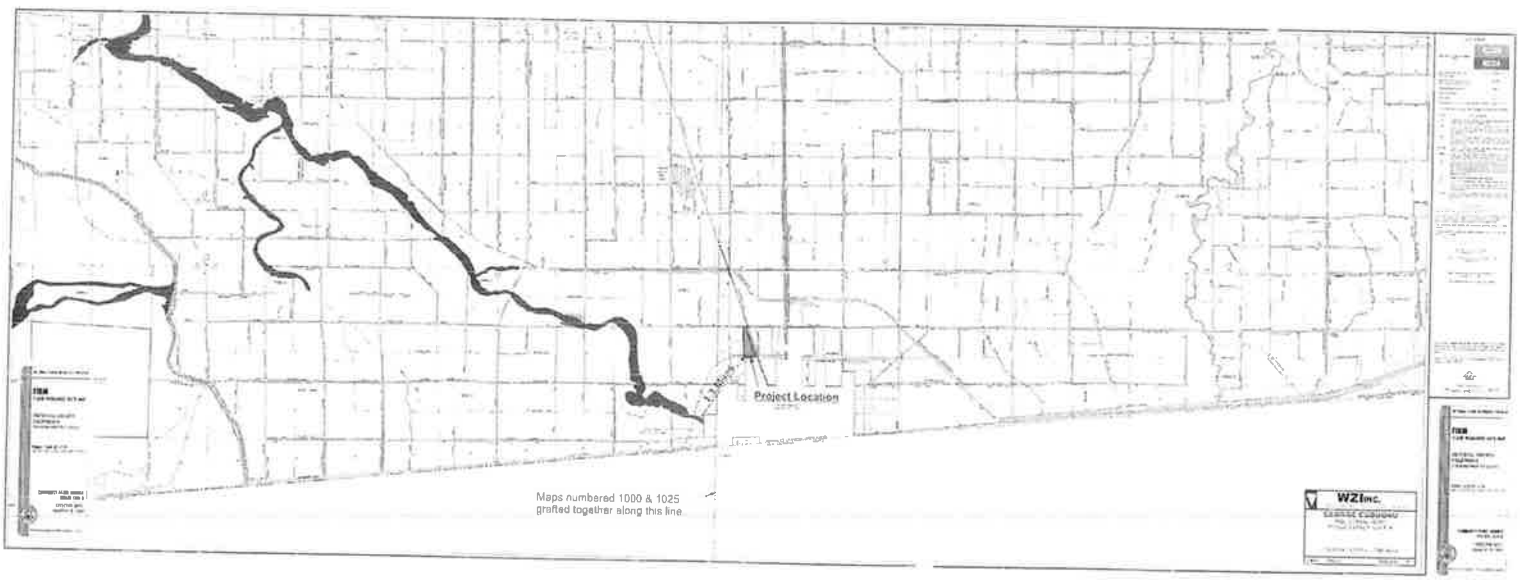
328'
W COLE BLVD
058-010-003
M-1-U
058-010-005
A-2-G-U
058-010-004
A-2-G-U
058-010-006
A-2-G-U
058-010-009
A-2-G-U
PROPOSED
UNDEVELOPED AREA
PARCEL 1
20.00 ACRES
058-010-012
CALEXICO
2611.6'
RAILWAY TRACK
058-010-052
A-2-U
EXISTING BUILDING
PARCEL 1
PARCEL 2
058-010-051
A-2 U
PRUETT RD
PARCEL 2
19.80 ACRES
2554.7'
PROPOSED 3" THICK DRIVEWAY
PROCESSING, PACKAGING AND SHIPPING AREA
PARKING
EXISTING WALL
LOADING AND UNLOADING AREA
PROPERTY LINE
PARCEL 2
PARCEL 3
PARCEL 3
05.01 ACRES
ELECTRICAL POLE AND WIRING
1090'
PROPERTY LINE
WATER CANAL
REMARKS
LEGENDS
SEWER LINE 8"
WATER LINE 16"
WATER LINE 12"
SITE PLAN
FLOOR PLAN & SCHEMATIC LAYOUT
THE WEST COLE BLVD CALEXICO TRUST
PARCEL NO 058-010-052
LOT AREA 44.81 ACRES
DATE 12.21.2021
SCALE 1/350" = 1'0"
PLOT SIZE 8.5" x 11"
NAME GEORGE EGBUONU
TELEPHONE NUMBER 310-363-7163
N
W
E
S
0
175'
350'
SHEET NO
01

Exhibit C



Panel 0625C2075C
T. 16 S.
T. 17 S.
JASPER RD
Dogwood Canal
KLOKE RD
IMPERIAL COUNTY
CITY OF CALEXICO
2
CITY OF CALEXICO
060067
JOINS PANEL 2100
MADDOX RD
PRUETT RD
11
ZONE X
Project Location
Project Location
Panel 6025C2067
0.9 Mile
Flood Zone Legend
LEGEND
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
FLOODWAY AREAS IN ZONE AE
OTHER FLOOD AREAS
OTHER AREAS
ZONE X
ZONE D
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
WZI INC.
BAKERSFIELD, CALIFORNIA
GEORGE EGBUONU
INDUSTRIAL HEMP
PROCESSING FACILITY
CITY FLOOD ZONE MAP
DATE: 06/22
FIGURE X

Exhibit D



Project Location
Maps numbered 1000 & 1025 grafted together along this line
WZI INC.

Exhibit E

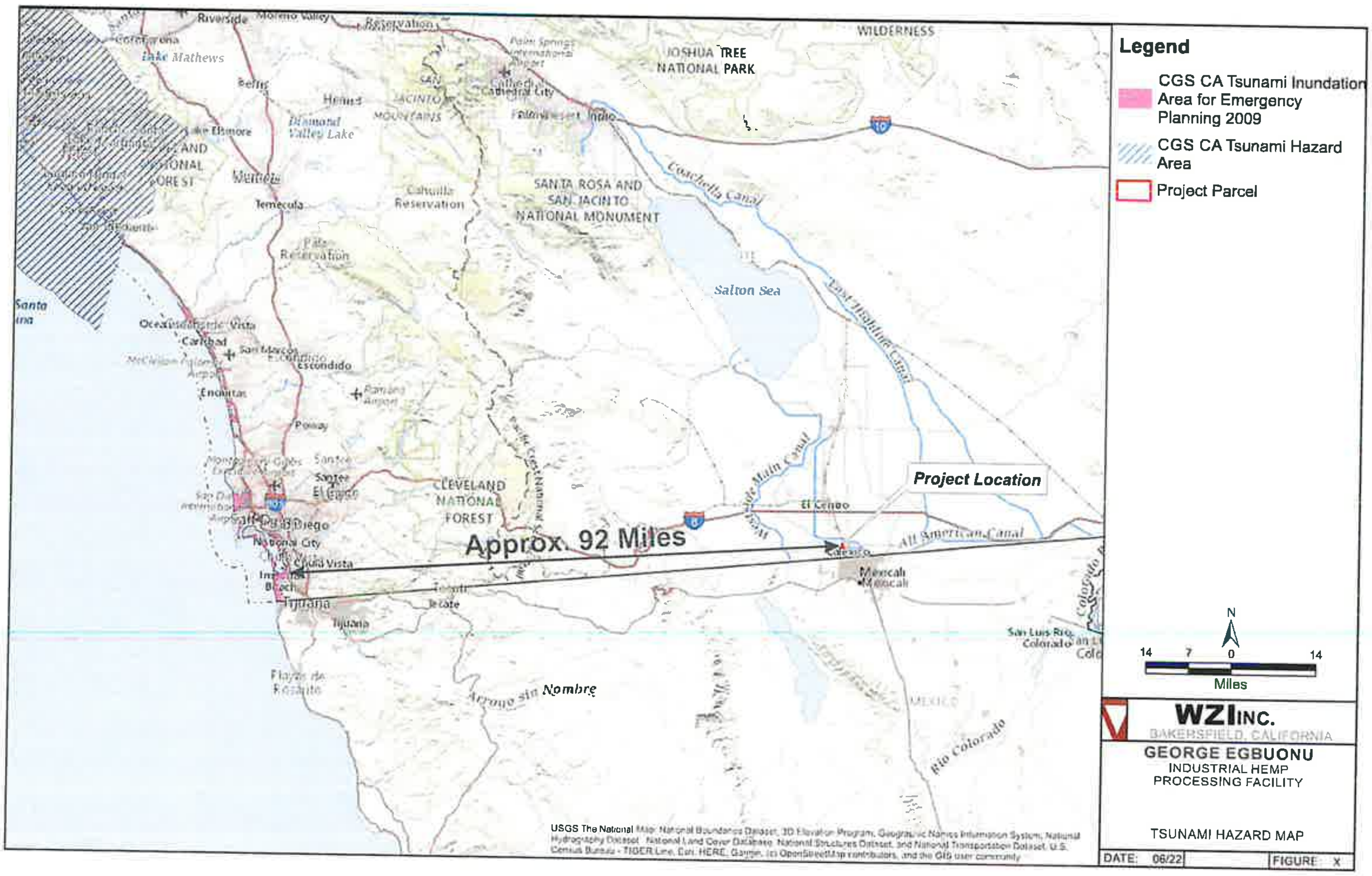

Legend
CGS CA Tsunami Inundation Area for Emergency Planning 2009
CGS CA Tsunami Hazard Area
Project Parcel
Project Location
Approx. 92 Miles
Riverside
Lake Mathews
JOSHUA TREE NATIONAL PARK
WILDERNESS
SANTA ROSA AND SAN JACINTO NATIONAL MONUMENT
Salton Sea
Coachella Canal
East Highline Canal
CLEVELAND NATIONAL FOREST
All American Canal
El Centro
Mexicali
Tijuana
Temecula
Escondido
Encinitas
Poway
Chula Vista
National City
Arroyo sin Nombre
Rio Colorado
N
14 7 0 14
Miles
WZI INC.
BAKERSFIELD, CALIFORNIA
GEORGE EGBUONU
INDUSTRIAL HEMP PROCESSING FACILITY
TSUNAMI HAZARD MAP
DATE: 06/22
FIGURE: X

Exhibit F

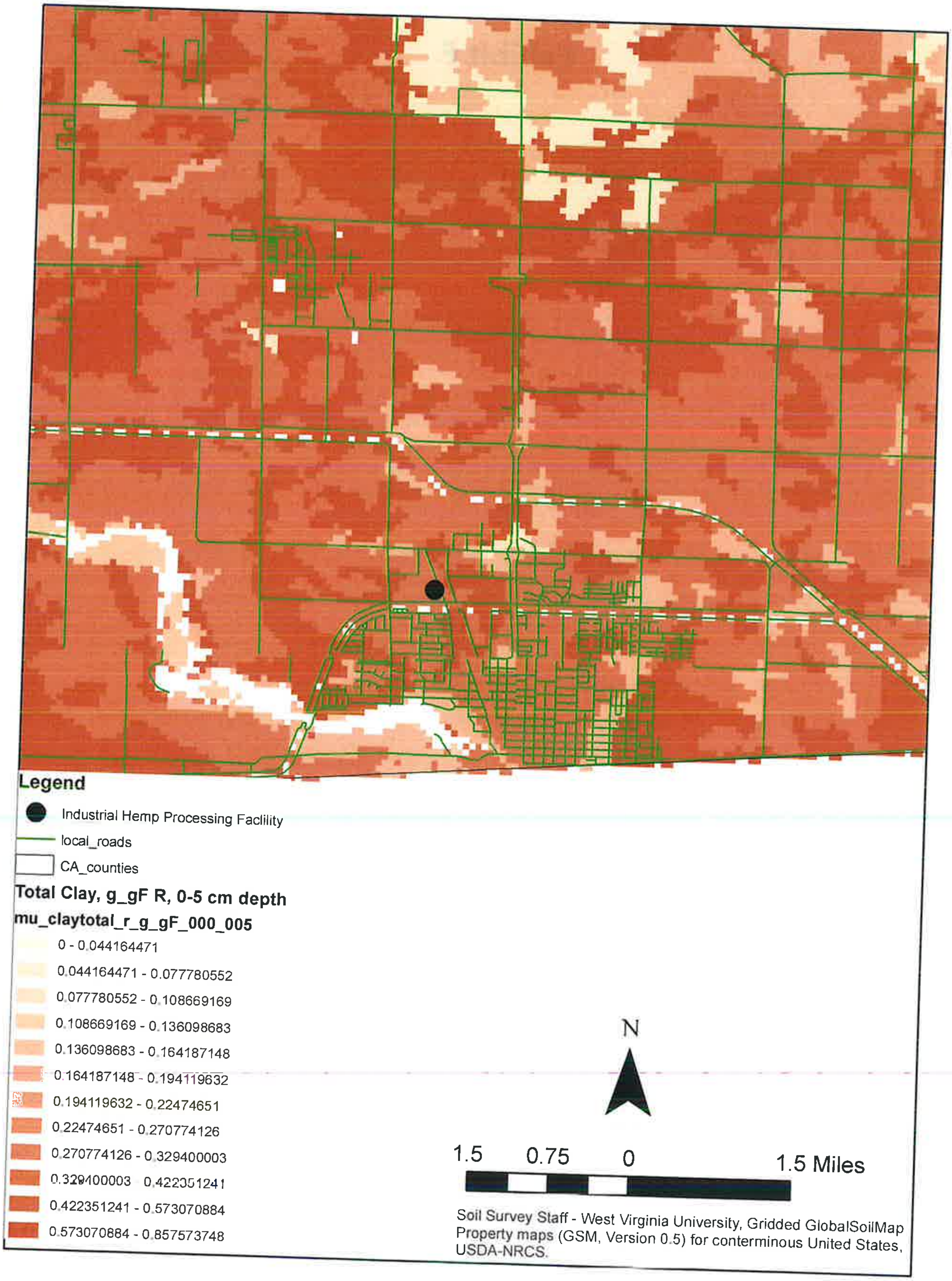
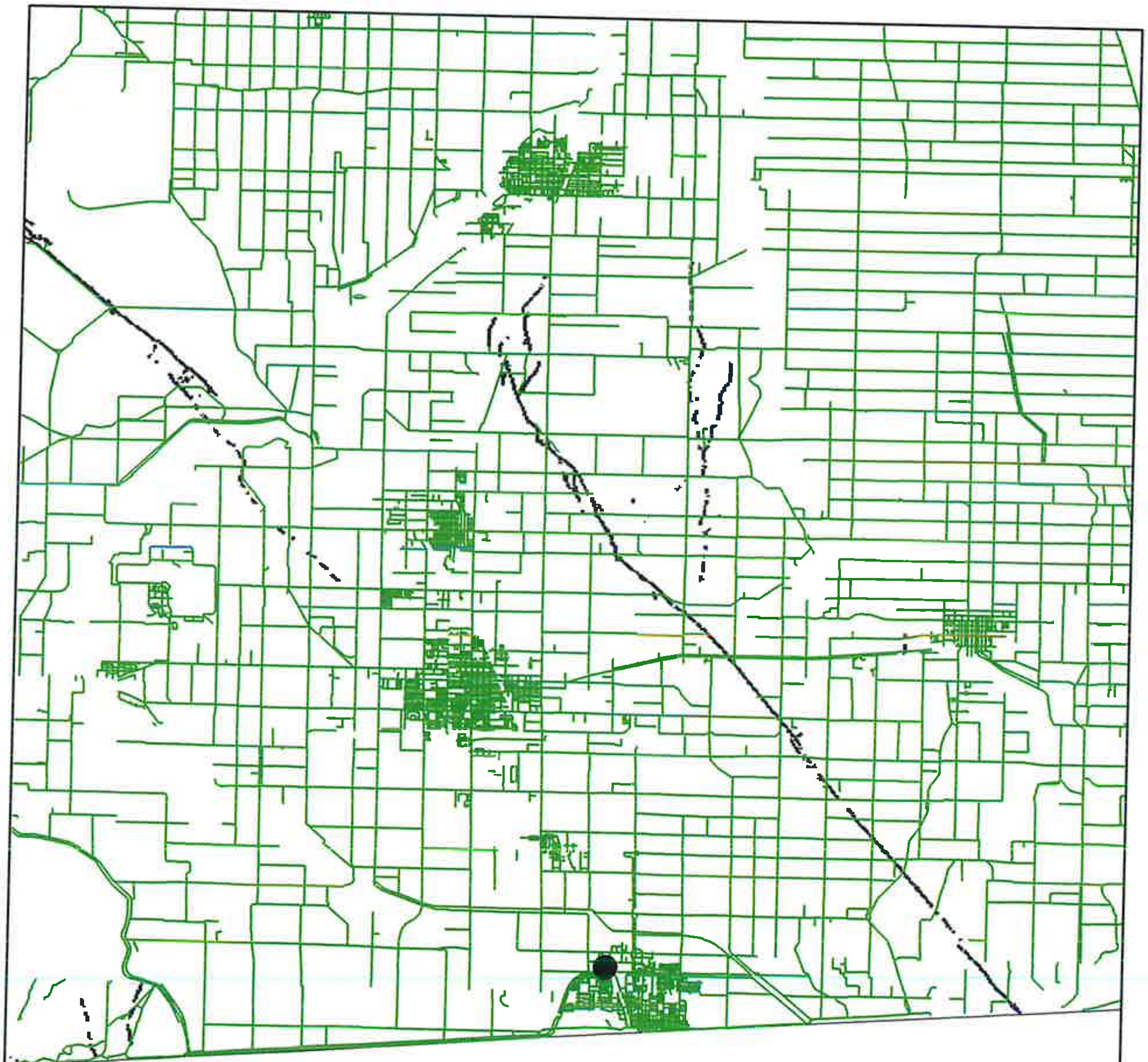

Legend
Industrial Hemp Processing Faclility
local_roads
CA_counties
Total Clay, g_gF R, 0-5 cm depth
mu_claytotal_r_g_gF_000_005
0 - 0.044164471
0.044164471 - 0.077780552
0.077780552 - 0.108669169
0.108669169 - 0.136098683
0.136098683 - 0.164187148
0.164187148 - 0.194119632
0.194119632 - 0.22474651
0.22474651 - 0.270774126
0.270774126 - 0.329400003
0.329400003 - 0.422351241
0.422351241 - 0.573070884
0.573070884 - 0.857573748
N
1.5 0.75 0 1.5 Miles
Soil Survey Staff - West Virginia University, Gridded GlobalSoilMap Property maps (GSM, Version 0.5) for conterminous United States, USDA-NRCS.

Exhibit G



Legend

- Industrial Hemp Processing Faclility
- local_roads
- CA_counties

Fault Traces

LINE_TYPE

- Accurately Located
- Approximately Located
- Approximately Located, Queried
- Inferred
- Inferred, Queried
- Concealed
- Concealed, Queried
- Aerial Photo Lineament

N

5 2.5 0 5 Miles

Seismic Hazards Program, California Geological Survey, California Department of Conservation

Exhibit H

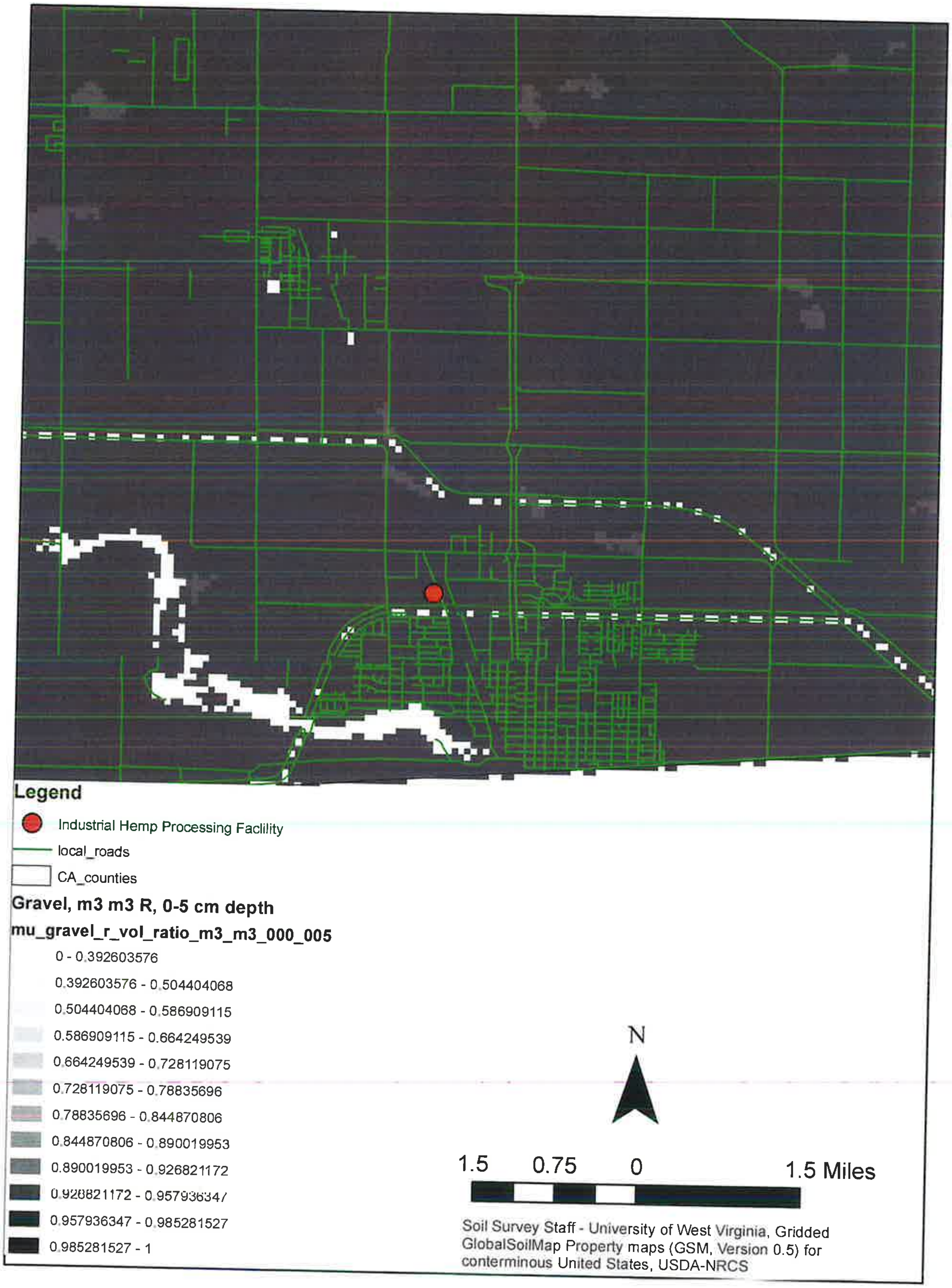
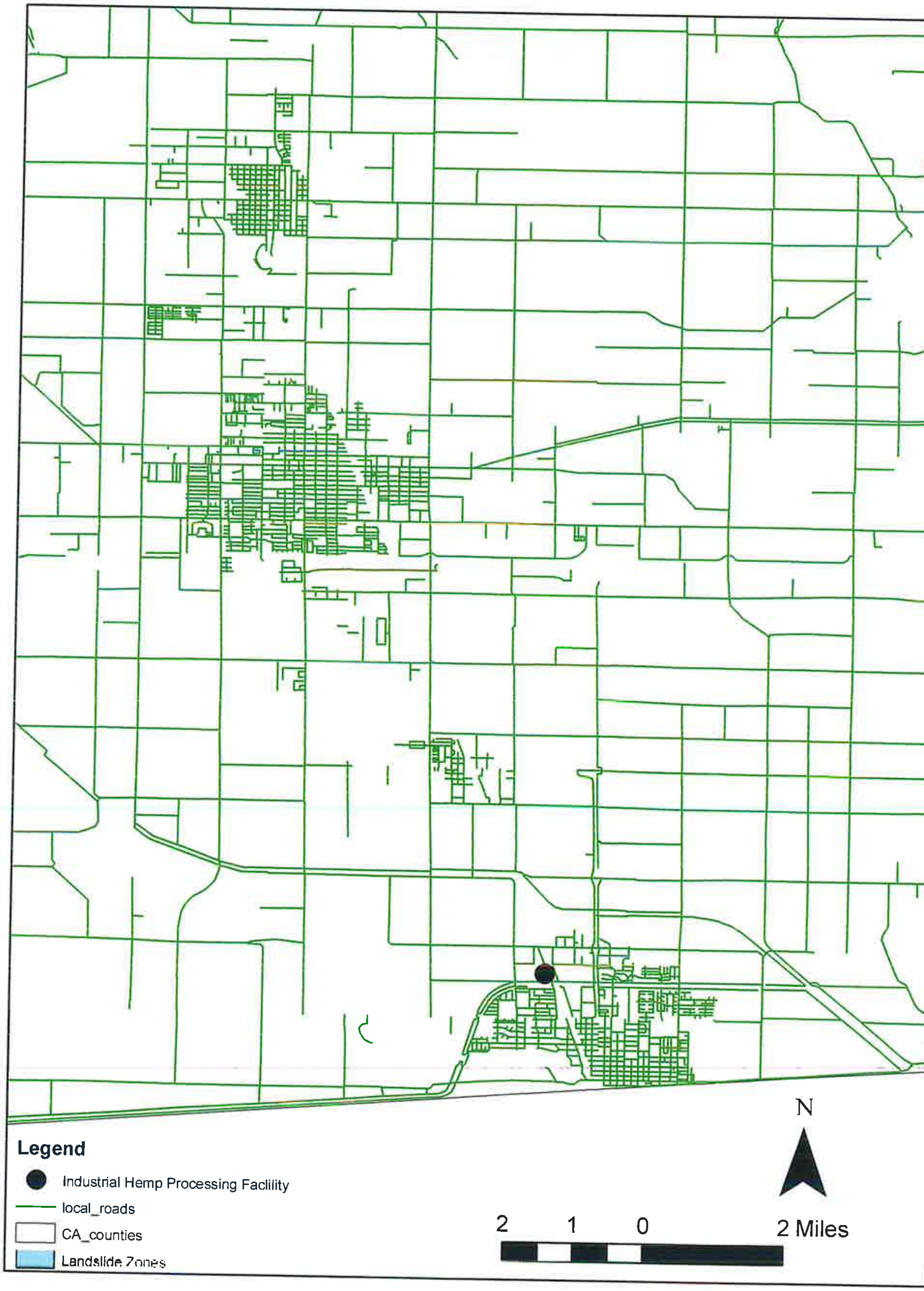
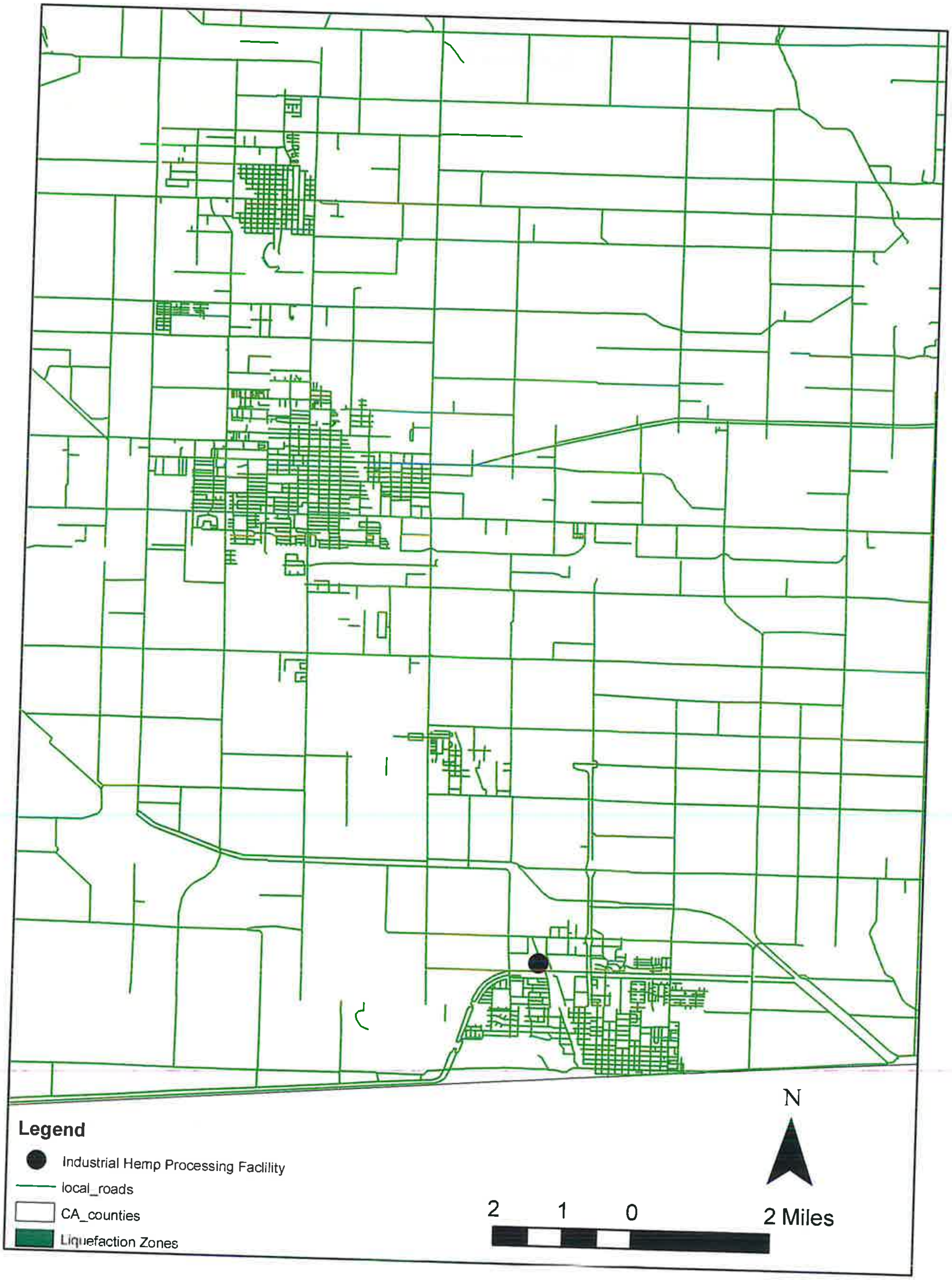

Legend
Industrial Hemp Processing Faclility
local_roads
CA_counties
Gravel, m3 m3 R, 0-5 cm depth
mu_gravel_r_vol_ratio_m3_m3_000_005
0 - 0.392603576
0.392603576 - 0.504404068
0.504404068 - 0.586909115
0.586909115 - 0.664249539
0.664249539 - 0.728119075
0.728119075 - 0.78835696
0.78835696 - 0.844870806
0.844870806 - 0.890019953
0.890019953 - 0.926821172
0.926821172 - 0.957936347
0.957936347 - 0.985281527
0.985281527 - 1
N
1.5
0.75
0
1.5 Miles
Soil Survey Staff - University of West Virginia, Gridded GlobalSoilMap Property maps (GSM, Version 0.5) for conterminous United States, USDA-NRCS

Exhibit I



Legend
Industrial Hemp Processing Facility
local_roads
CA_counties
Landslide Zones
2 1 0 2 Miles
N

Exhibit J



N
Legend
Industrial Hemp Processing Facility
local_roads
CA_counties
Liquefaction Zones
2 1 0 2 Miles

Exhibit K

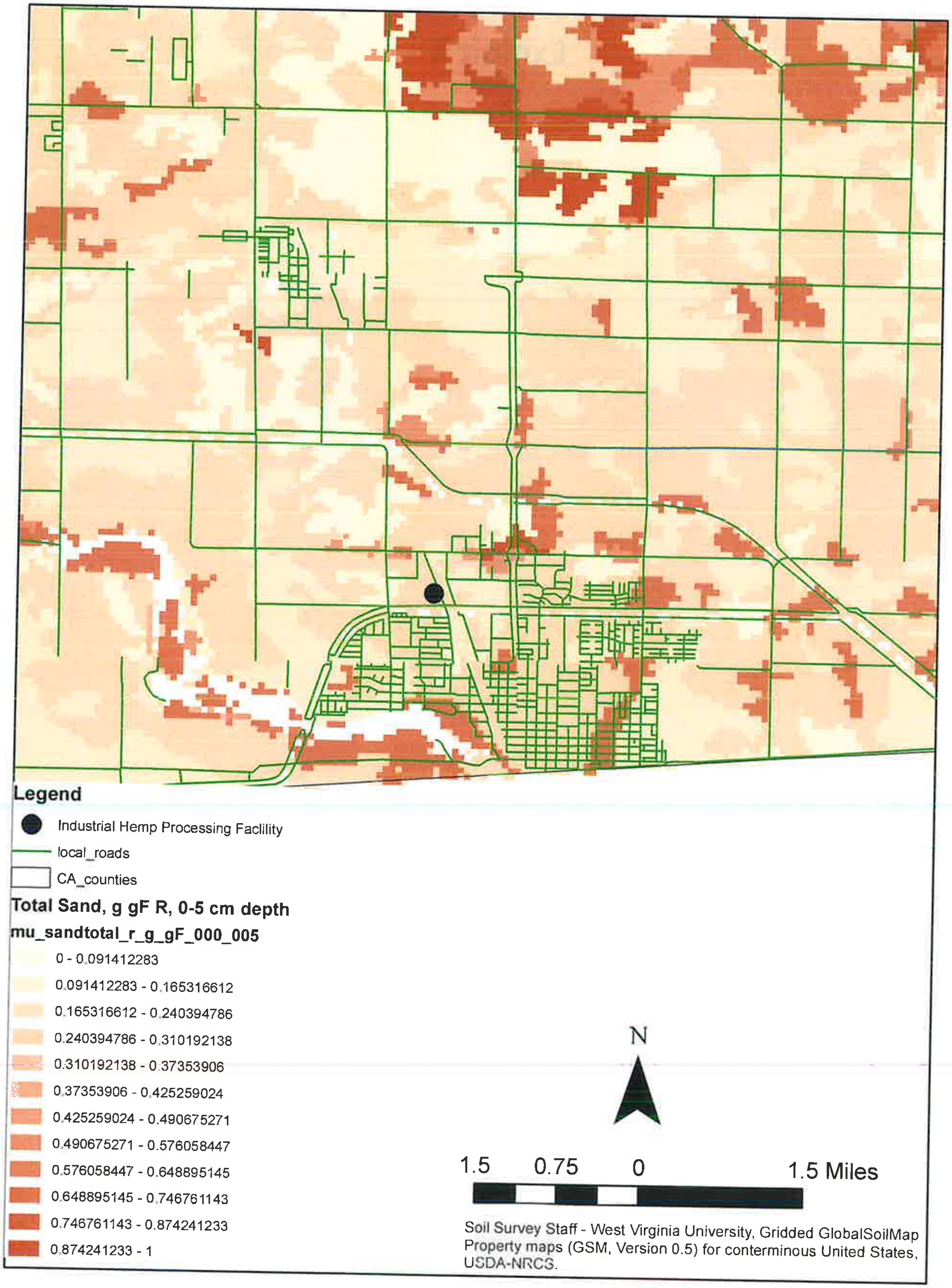

Legend
Industrial Hemp Processing Faclility
local_roads
CA_counties
Total Sand, g gF R, 0-5 cm depth
mu_sandtotal_r_g_gF_000_005
0 - 0.091412283
0.091412283 - 0.165316612
0.165316612 - 0.240394786
0.240394786 - 0.310192138
0.310192138 - 0.37353906
0.37353906 - 0.425259024
0.425259024 - 0.490675271
0.490675271 - 0.576058447
0.576058447 - 0.648895145
0.648895145 - 0.746761143
0.746761143 - 0.874241233
0.874241233 - 1
N
1.5
0.75
0
1.5 Miles
Soil Survey Staff - West Virginia University, Gridded GlobalSoilMap Property maps (GSM, Version 0.5) for conterminous United States, USDA-NRCS.

Exhibit L

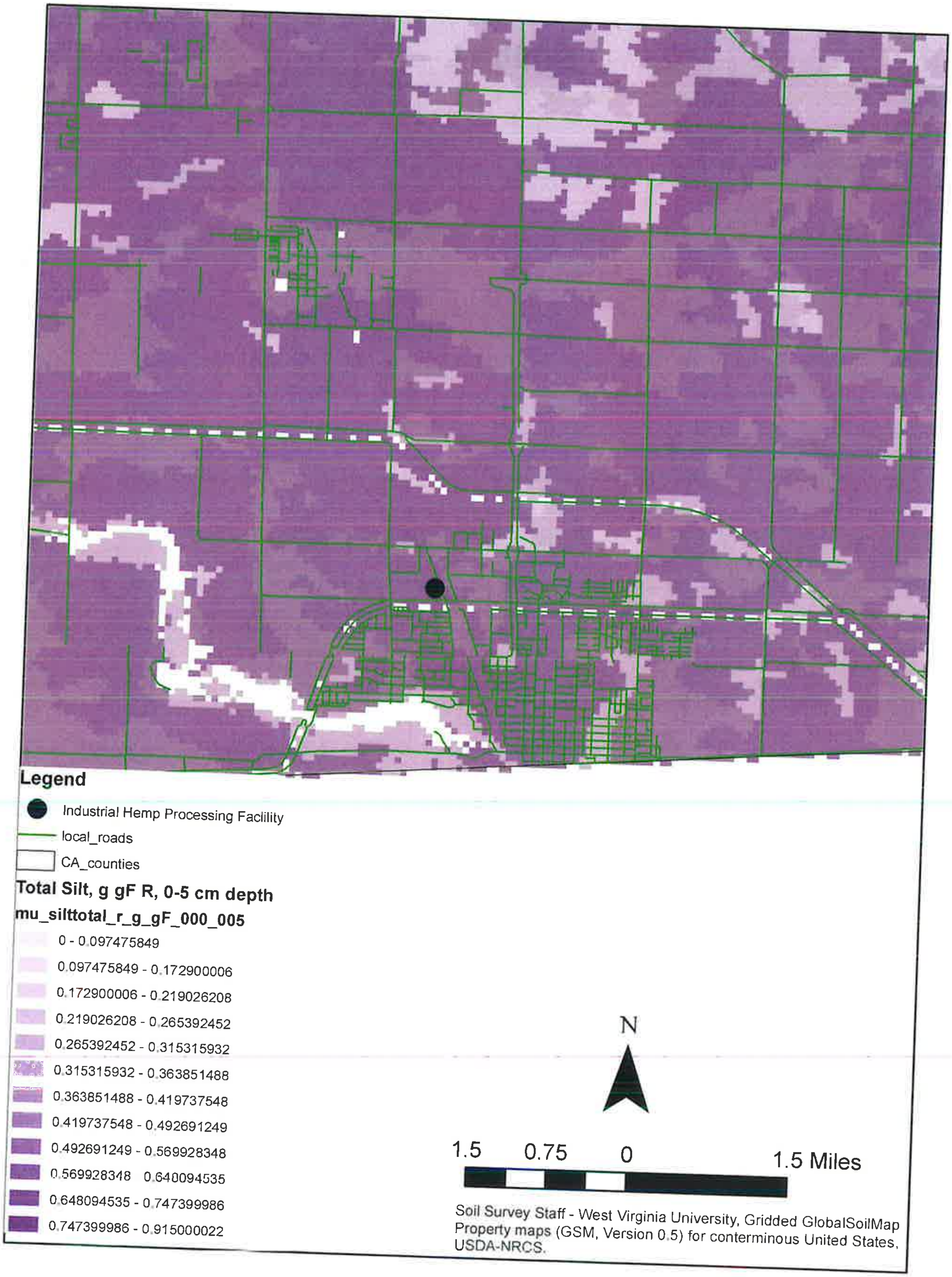
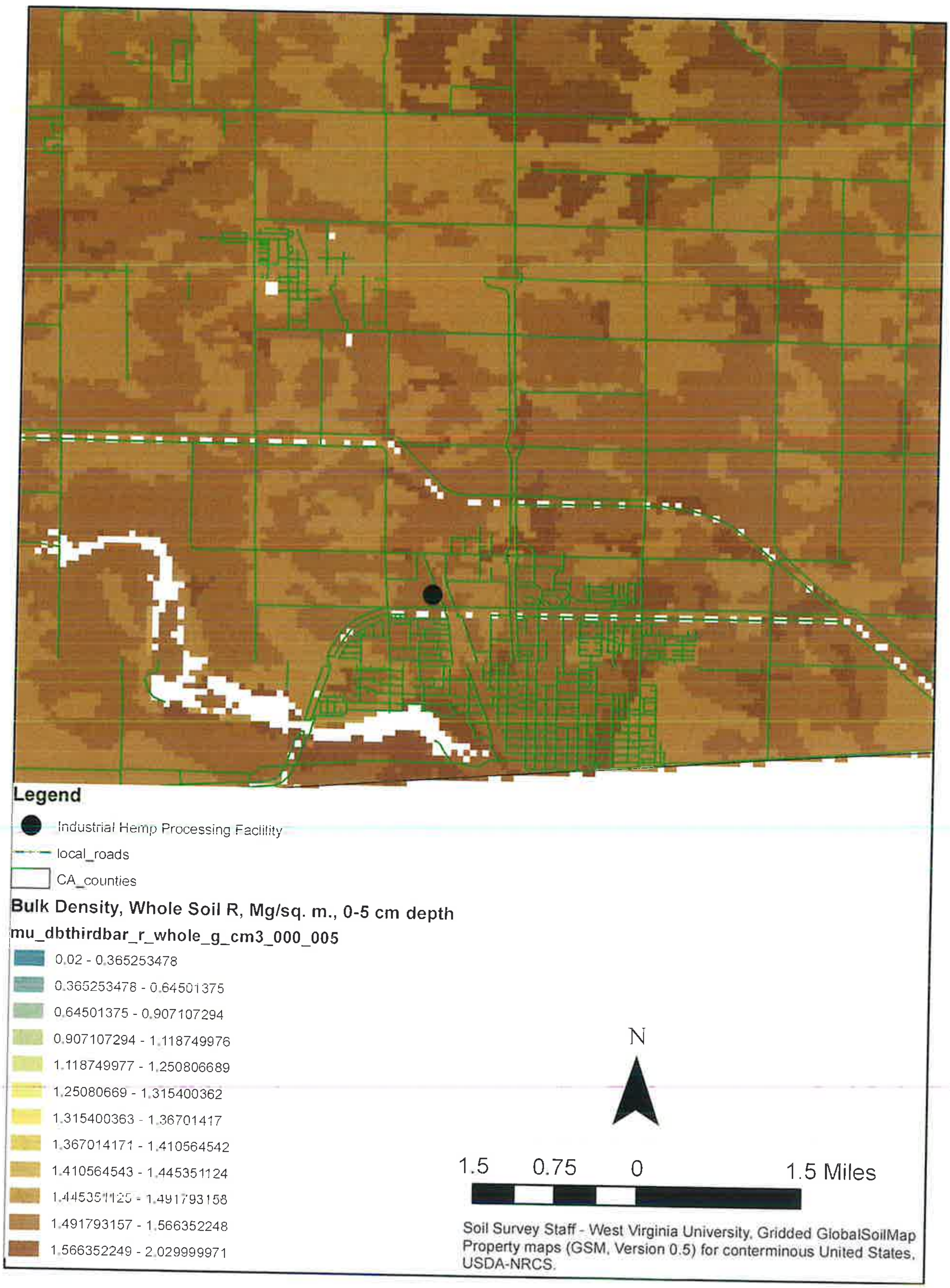

Legend
Industrial Hemp Processing Facility
local_roads
CA_counties
Total Silt, g gF R, 0-5 cm depth
mu_silttotal_r_g_gF_000_005
0 - 0.097475849
0.097475849 - 0.172900006
0.172900006 - 0.219026208
0.219026208 - 0.265392452
0.265392452 - 0.315315932
0.315315932 - 0.363851488
0.363851488 - 0.419737548
0.419737548 - 0.492691249
0.492691249 - 0.569928348
0.569928348 0.640094535
0.648094535 - 0.747399986
0.747399986 - 0.915000022
N
1.5
0.75
0
1.5 Miles
Soil Survey Staff - West Virginia University, Gridded GlobalSoilMap Property maps (GSM, Version 0.5) for conterminous United States, USDA-NRCS.

Exhibit M



Soil Survey Staff - West Virginia University. Gridded GlobalSoilMap Property maps (GSM, Version 0.5) for conterminous United States. USDA-NRCS.

Exhibit N

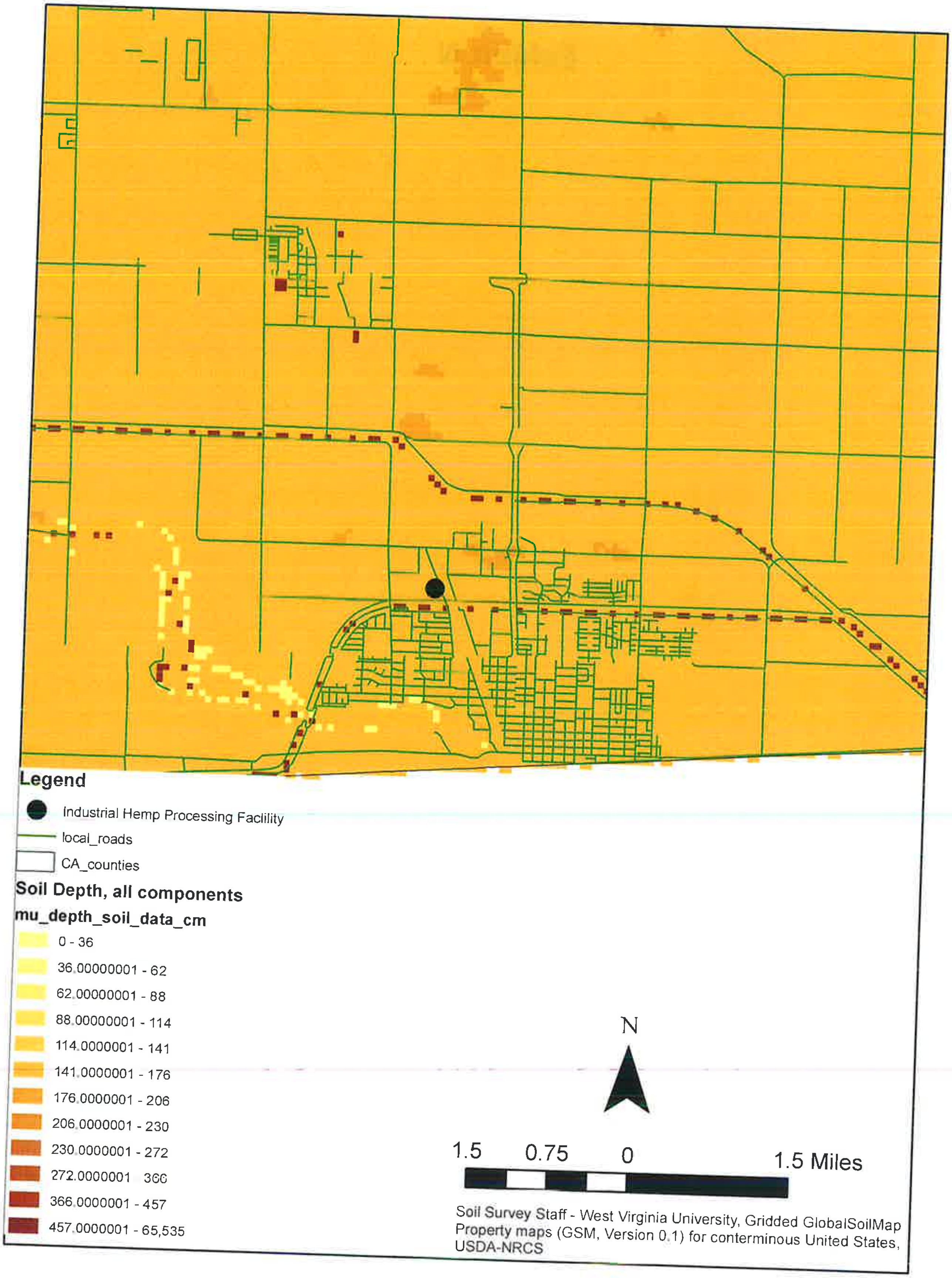
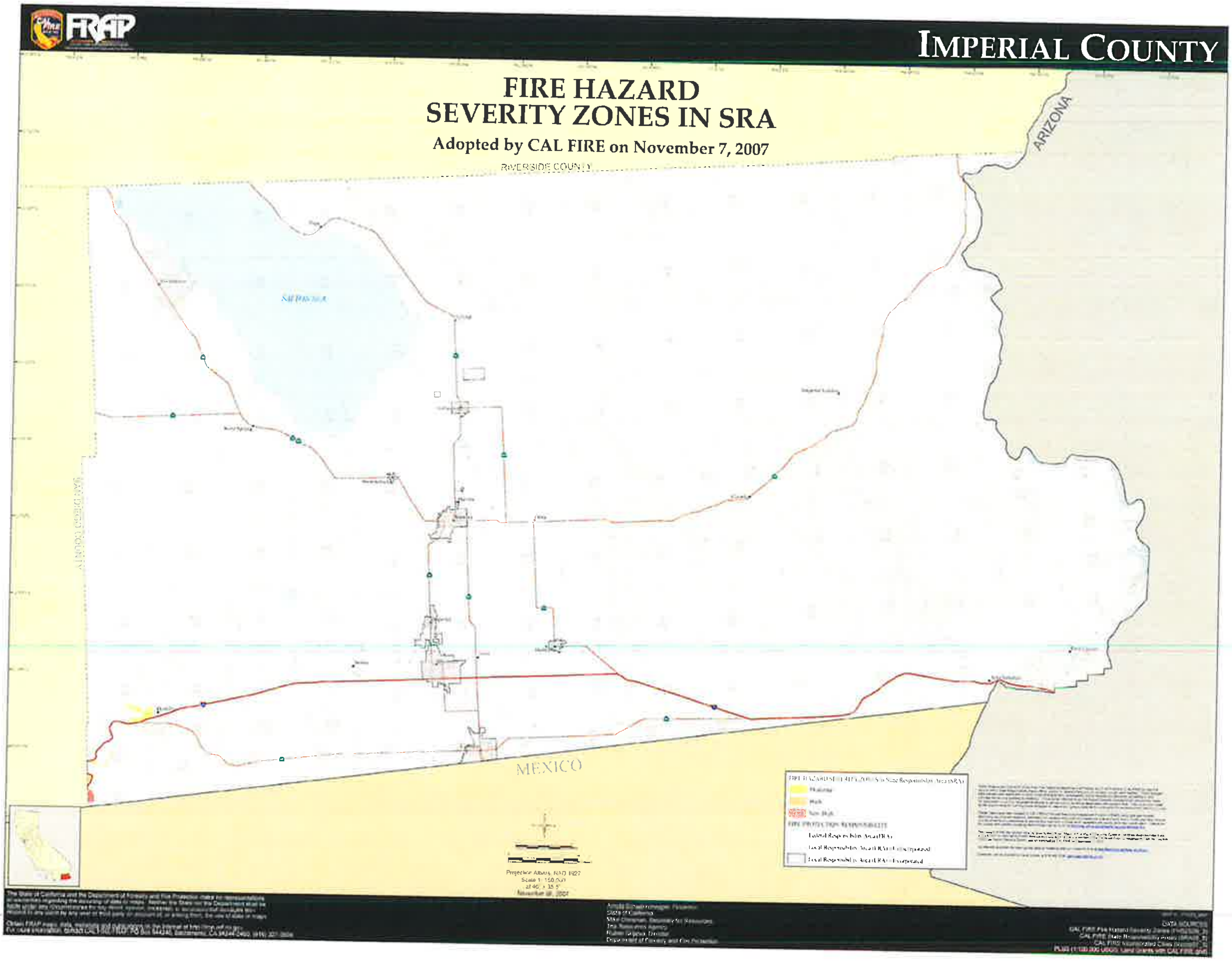

Legend
Industrial Hemp Processing Facility
local_roads
CA_counties
Soil Depth, all components
mu_depth_soil_data_cm
0 - 36
36.00000001 - 62
62.00000001 - 88
88.00000001 - 114
114.0000001 - 141
141.0000001 - 176
176.0000001 - 206
206.0000001 - 230
230.0000001 - 272
272.0000001 366
366.0000001 - 457
457.0000001 - 65,535
N
1.5 0.75 0 1.5 Miles
Soil Survey Staff - West Virginia University, Gridded GlobalSoilMap Property maps (GSM, Version 0.1) for conterminous United States, USDA-NRCS

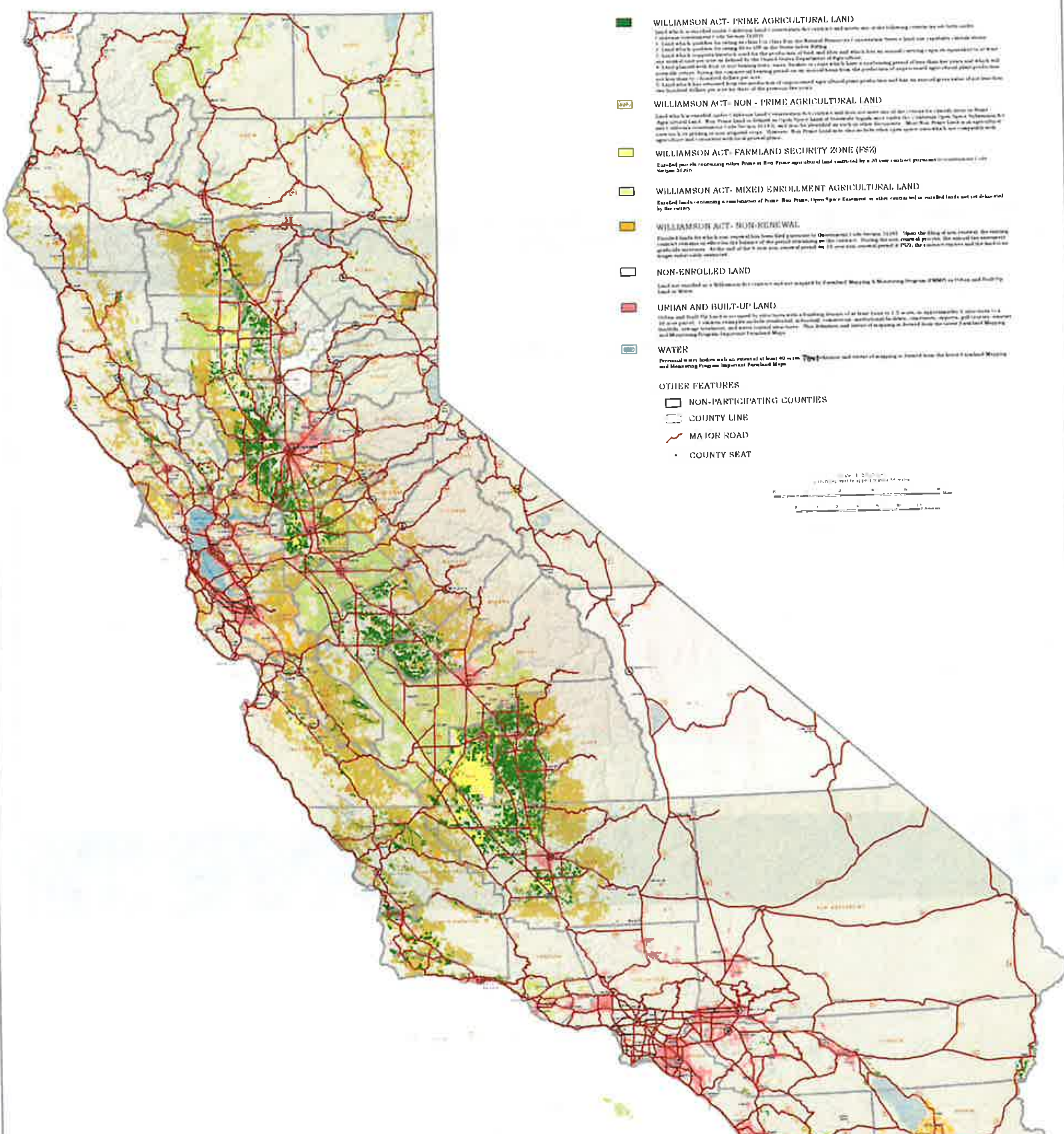
Exhibit O


FRAP
IMPERIAL COUNTY
FIRE HAZARD
SEVERITY ZONES IN SRA
Adopted by CAL FIRE on November 7, 2007
RIVERSIDE COUNTY
ARIZONA
SAN DIEGO COUNTY
MEXICO
Projection Albers, NAD 1927

Appendices

Appendix 1

STATE OF CALIFORNIA WILLIAMSON ACT CONTRACT LAND



The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact:

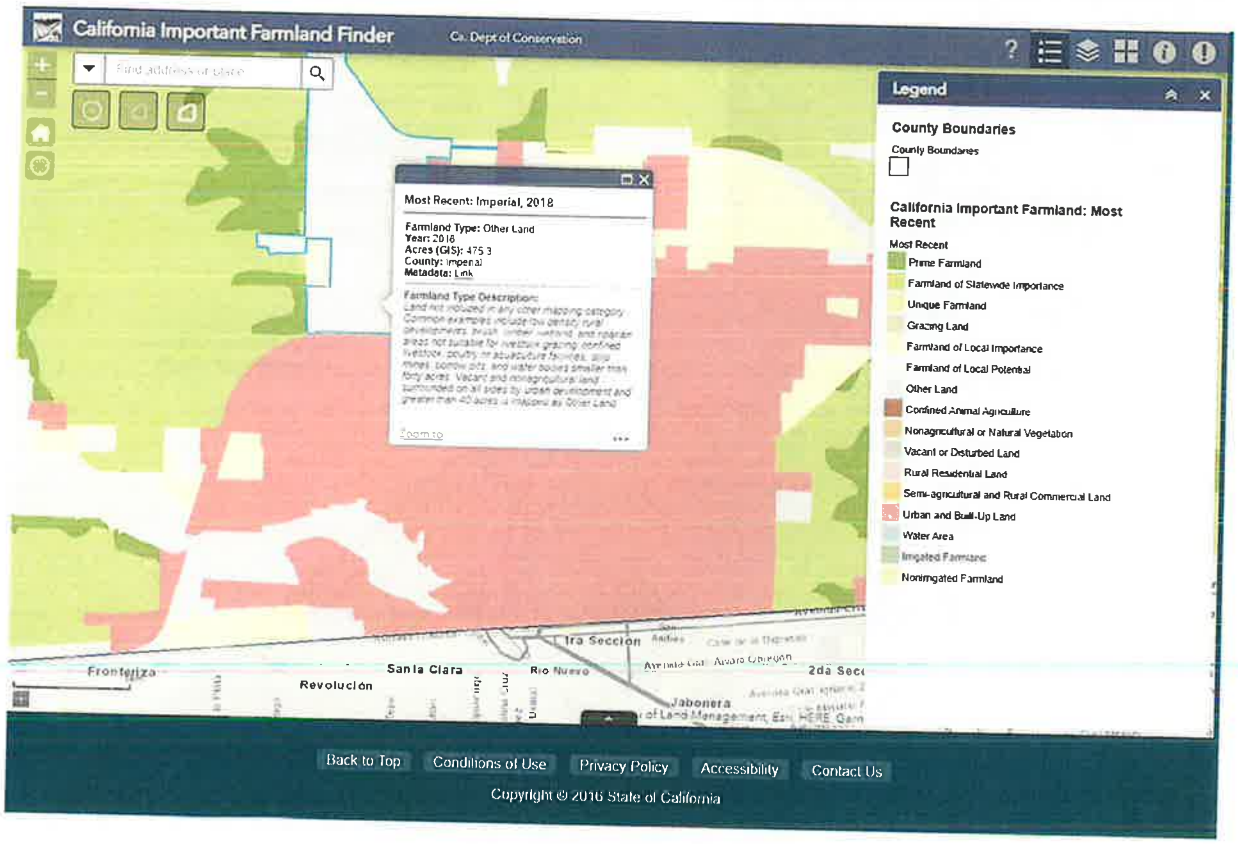
Department of Conservation
Division of Land Resource Protection
801 K Street, MS18-13
Sacramento, CA 95814

Phone (916) 324-0850,
email: dlrp@conservation.ca.gov,
web page: www.conservation.ca.gov/dlrp/lca

Maps depicting Williamson Act enrollment are produced by the California Department of Conservation, Division of Land Resource Protection, in cooperation with participating local jurisdictions. Data reflects the most recent Geographic Information Systems (GIS) or hardcopy maps submitted to the Department by county planning agencies and/or assessor offices. While most data reflects enrollment status as of January 2016, actual dates vary by county. As the status of enrolled lands may change throughout the year, please contact the local jurisdictions directly to obtain current site specific information.

Cultural base information was derived from public domain data sets, based upon design of the U.S. Geological Survey, with updates generated by digitizing over current imagery.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.


California Important Farmland Finder
Ca. Dept of Conservation
Most Recent: Imperial, 2018
Farmland Type: Other Land
Year: 2018
Acres (GIS): 475 3
County: Imperial
Metadata: Link
Farmland Type Description:
Legend
County Boundaries
County Boundaries
California Important Farmland: Most Recent
Most Recent
Prime Farmland
Farmland of Statewide Importance
Unique Farmland
Grazing Land
Farmland of Local Importance
Farmland of Local Potential
Other Land
Confined Animal Agriculture
Nonagricultural or Natural Vegetation
Vacant or Disturbed Land
Rural Residential Land
Semi-agricultural and Rural Commercial Land
Urban and Built-Up Land
Water Area
Irrigated Farmland
Nonirrigated Farmland
Fronteriza
Revolución
Santa Clara
Rio Nuevo
1ra Seccion
2da Secc
Jabonera
Back to Top
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Appendix 2

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

POLICY: CEQA AIR QUALITY HANDBOOK

EFFECTIVE: February 2, 2005
Revised June 7, 2022

POLICY NUMBER: 36

GENERAL:

This Policy, incorporating the Imperial County Air Pollution Control District's (ICAPCD) California Environmental Quality Act (CEQA) Air Quality Handbook, provides guidance to lead agencies, planning consultants, ICAPCD staff, and project proponents in assessing the potential air quality impacts from residential and commercial developments. The CEQA Air Quality Handbook establishes procedures to streamline criteria to evaluate the impact of residential and commercial developments. This protocol is designed to give the Imperial County specific guidelines that identify when an air quality analysis is necessary, the type of analysis that should be performed, the significance of the impacts predicted by the analysis, and the mitigation measures needed to reduce the overall air quality impacts.

The CEQA Air Quality Handbook is a useful document that assists in the preparation of the air quality analysis portion of any environmental document, and makes it consistent with the rules and regulations governing the air district and those found within the guidelines of CEQA.

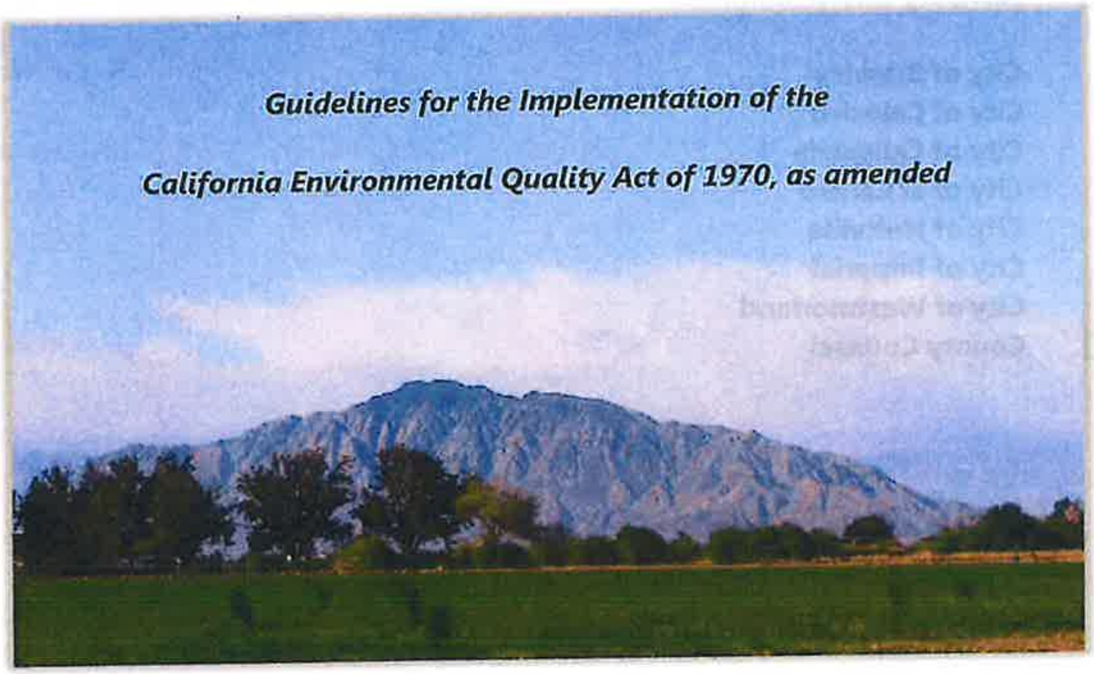
Approved

Matt Dessert

Matt Dessert
Air Pollution Control Officer

CEQA

AIR QUALITY HANDBOOK



As Amended by

Imperial County Air Pollution Control District
150 South Ninth Street
El Centro, California

Final
December 12, 2017

TRANSMITTAL RECORD

- ☐ Imperial County Planning/Building Department
- ☐ City of Brawley – City Planner
- ☐ City of Calexico – Acting Planning Director
- ☐ City of Calipatria – City Manager
- ☐ City of El Centro – Acting Planning Director
- ☐ City of Holtville – Public Works Manager
- ☐ City of Imperial – City Manager
- ☐ City of Westmorland – Planning
- ☐ Building Industry Association (BIA) – Imperial Area Coordinator
- ☐ Advisory Board Members

  City of Brawley
  City of Calexico
  City of Calipatria
  City of El Centro
  City of Holtville
  City of Imperial
  City of Westmorland
- ☐ County Counsel

1. Purpose

The Guidelines for the implementation of the California Environmental Quality Act (CEQA) section 15022 states, "[e]ach public agency shall adopt objectives, criteria, and specific procedures consistent with CEQA and these Guidelines for administering its responsibilities under CEQA..."[1] Thus, this guidance document shall serve to fulfill the Imperial County Air Pollution Control District's (ICAPCD) obligation under CEQA[2]. In addition, the objectives, criteria and specific procedures, henceforth known as protocol, are intended to serve as guidance and are not intended to replace the authority or requirements of CEQA or its Guidelines. In the event that any of the following protocol conflicts with the provisions of CEQA or its Guidelines, the provisions of CEQA or its Guidelines shall control.

As stated above the intent of this document is to develop and adopt protocol for the ICAPCD. This protocol has been created to serve as a guidance tool in assisting Lead Agencies, consultants, ICAPCD staff, and project proponents with uniform procedures, which are designed to help assess any potential air quality impacts from residential, commercial, and industrial developments during the environmental review process. The protocol is designed to give local, public and government agencies specific guidelines that identify when an air quality analysis is necessary, the type of analysis that should be performed, the level of significance of the impacts predicted by the analysis, and the mitigation measures needed to eliminate or reduce the overall air quality impacts. Because CEQA establishes a "duty" upon public agencies to minimize or avoid environmental damage where feasible the ultimate outcome of any analysis should be the development and implementation of mitigation measures.[3] In order to properly determine and implement mitigation measures the preparation of an air quality analysis resulting from an environmental document must be consistent with the rules and regulations governing the ICAPCD and those found within the guidelines of CEQA. This handbook strives to provide guidance for the accurate and consistent evaluation of the potential air quality impacts created by plans and development proposals. Therefore, it is understood that when a proper air quality analysis is evaluated it will necessarily help identify mitigation measures, which will reduce or eliminate adverse and significant impacts. The reduction of such adverse impacts will improve ambient concentrations, which ultimately will improve air quality in Imperial County.

---

[1] The California Environmental Quality Act (Division 13, Public Resources Code, (PRC), 21000 et. seq.) as adopted by the State Legislature and as may be amended by Legislative Act and now contained in Title 14, Chapter 3 of the California Administrative Code, now cited as the CALIFORNIA CODE OF REGULATIONS (CCR) (commencing with Section 15000).

[2] Throughout this document the term ICAPCD refers to the Imperial County Air Pollution Control District.

[3] CEQA Guidelines §15021

2. Introduction

Clean air is vital to the health and welfare of every citizen of this country. The residents of Imperial County have an inherent right to clean air. To answer the call of improving and maintaining clean air, the legislature has given local ICAPCD regional authority over the control of air pollution from all sources other than emissions from motor vehicles. The ICAPCD has regulatory control over all stationary sources of air contaminants. These stationary sources are divided into point sources, such as factories, geothermal plants and rock quarries, and indirect sources, such as paved and unpaved roads, open areas and construction projects. These types of sources tend to have emissions that fit a generalized category and are considerably too small to warrant permitting. Generally, point sources of air contaminants are required to obtain specific operational permits from the ICAPCD while indirect sources are exempt. Indirect sources are facilities as well as land uses which do not emit a significant amount of pollution on their own but rather attract or generate motor vehicle trips which result in emissions of ozone precursors (VOC's, ROG, NOx), carbon monoxide (CO) and fine particulate matter(PM_{10} & $PM_{2.5}$).[4]

With the enactment of CEQA in 1970 the California Legislature required public agencies to consider and to disclose the environmental effects of their decisions to the public and governmental decision-makers. As an integral part of the disclosure requirements, CEQA mandates the implementation of feasible mitigation measures or alternatives so as to mitigate significant adverse impacts to the environment. Generally, CEQA address's a broad range of environmental issues, including water quality, noise, land use, natural resources, transportation, energy, human health and air quality. The specific legislative tool for the implementation of CEQA is the CEQA Guidelines adopted by the Office of Planning and Research in the Governor's Office. These Guidelines apply statewide and they govern the assessment, disclosure and review of all environmental impacts that may result from proposed projects.

This handbook has been designed to provide the Lead Agency, the Environmental Evaluation Committee (EEC) members, ICAPCD staff, other public agencies and project proponents with specific guidelines that identify when an air quality analysis is necessary, the type of analysis that should be performed, the significance of the impacts predicted by the analysis, and the mitigation measures needed to reduce the overall air quality impacts. The ICAPCD's handbook is solely an air quality guidance document. To address the overall general CEQA process, the Lead Agency, EEC members, ICAPCD staff, other public agencies and project proponents should follow the appropriately adopted CEQA document for each municipality. For those projects and public departments which fall under the jurisdiction of Imperial County the Planning and Development Services

[4] Health & Safety Code §40716 gives ICAPCDs authority over indirect or area sources of air contaminants

Department's guidance manual entitled "Rules and Regulations to Implement California Environmental Quality Act (CEQA) as Amended" should be followed.

3. Role of the ICAPCD within the CEQA Process

Under CEQA, the ICAPCD may act as a Lead Agency, a Responsible Agency or a Reviewing Agency.

Lead Agency: A Lead Agency normally is the agency with general discretionary governmental powers, such as a city or county[5]. That is, if a government agency – city or county – has jurisdiction over discretionary land use permits then that agency will be the preferred Lead Agency[6]. For example, the Imperial County Department of Planning & Development Services has jurisdiction over zoning and as such is typically the lead agency for all residential, commercial and industrial development projects proposed within Imperial County[7]. The ICAPCD will undertake the Lead Agency role when a project requires an ICAPCD permit and no other agency has prepared or will prepare a CEQA document for that project.[8]

A Lead Agency is responsible for compliance with CEQA by ensuring that the potential environmental impacts associated with a proposed project are adequately assessed. The assessment is comprised of several determinations, which includes, but is not limited to, exempting a project from CEQA and for those projects deemed nonexempt, preparing a Negative Declaration (ND), a Mitigated Negative Declaration (MND) or an Environmental Impact Report (EIR). Because CEQA grants the Lead Agency full discretionary authority to determine the type of environmental document to be prepared, CEQA included a requirement that Lead Agencies consult with and solicit comments from responsible and reviewing agencies during the preparation of environmental documents.[9]

---

5 CEQA Guidelines section 15051 (b) (1)

6 Discretionary land use permits include but are not limited to conditional use permits, tentative maps and Specific Plans.

7 According to the "Rules and Regulations to Implement CEQA Rules" adopted by the Planning & Development Services Department the Planning/Building Department is designated as the principal "Lead Agency" Department for the County with respect to the CEQA compliance, of projects.

8 The regulations found in the "Rules and Regulations to Implement CEQA Rules" adopted by the Planning & Development Services Department shall be applicable to all County Department(s) that have responsibilities under CEQA as either a "Lead Agency" or a "Responsible Agency".

9 CEQA Guidelines §15050 (c). In addition, Environmental documents include but are not limited to an Initial Study, a ND, and Mitigated ND or any of the many types of EIR's.

Responsible Agency: A Responsible Agency is a public agency, other than the Lead Agency, which has responsibility for carrying out or approving a project.[10] The power to approve a project has been defined as a discretionary approval power.[11] Therefore, the ICAPCD is a Responsible Agency for projects or portions of a project that require an ICAPCD permit or that require any other approval by the ICAPCD. For example, a project under the jurisdiction of the Imperial County will submit an Initial Study to the EEC for review. Here, the ICAPCD is considered a Responsible Agency because it is a member of the EEC. However, the EEC as a body will determine, by vote, whether an EIR, Mitigated ND, or ND is required for the project and will cause the appropriate document to be prepared. Similarly, the ICAPCD has discretionary permitting approval power. Under this capacity, the ICAPCD may coordinate the environmental review process with the ICAPCD's permitting process. While the Lead Agency considers all the potential impacts of a project, the Responsible Agency only considers those aspects that are within the agency's expertise or that require any other approval by the ICAPCD. Under this capacity, the ICAPCD will review and comment to the Lead Agency where the deficiencies lie in the air quality analysis and provide suggestions as to the feasible mitigation measures.

Reviewing Agency: Under CEQA, when an agency is neither a Lead Agency nor a Responsible Agency but has jurisdiction by law with respect to the project or is a Trustee agency over a particular natural resource, that agency is said to have reviewing power over the proposed project.[12] As a Reviewing Agency, the ICAPCD serves as an advisory agency to the Lead Agency. The ICAPCD comments on the adequacy of the air quality analysis, helps to identify a project's impact on air quality and recommends any potential mitigation measures for Lead Agency consideration. In addition, the ICAPCD may comment on other sections of the environmental document, such as traffic, which are related to the impacts on air quality. In any event, a final review by the ICAPCD will include an identification of any deficiencies in the air quality analysis and the recommendation of feasible mitigation measures.

In all cases, the primary concern of the ICAPCD is air quality improvement and maintenance. The ICAPCD provides guidance primarily to mitigate adverse impacts to air quality from development projects within the Imperial County. For most urban development proposals, this typically involves projects where the vehicle trip generation is enough to potentially cause high emission levels, which may hinder the ICAPCD's efforts in attaining and maintaining the Federal and State ambient air quality standards.

[10] Public Resources Code §21069
[11] CEQA Guidelines §15381
[12] CEQA Guidelines §15086

4. Thresholds of Significance

Under CEQA, each public agency is encouraged to develop and publish thresholds of significance. These thresholds of significance should be an identifiable quantitative, qualitative or performance level of a particular environmental effect; the noncompliance with would mean the effect would normally be significant while compliance with would mean the effect would normally be less than significant.[13]

Generally, a project proponent must submit a preliminary application to an appropriate Lead Agency for a preliminary review. The discretionary authority granted to Lead Agencies during the preliminary review process is found in CEQA. According to the CEQA guidelines, if during the preliminary review process the Lead Agency can clearly determine that an EIR is required the Lead Agency may, under its discretionary powers, skip further preliminary review and begin work directly on the EIR process[14]. In any case, CEQA grants to the Lead Agency the complete discretionary power to determine the type of environmental document, which will be prepared for a proposed project.

Under most circumstances, upon completion of the preliminary review, an Initial Study is conducted to identify any significant environmental impacts created by the proposed project.[15] The Initial Study should analyze all phases of a proposed project that includes construction and operation as well as cumulative impacts. When the air quality evaluation of an Initial Study identifies no potential significant air quality impacts or a less than significant impact then the Lead Agency may decide to adopt a ND[16]. However, when the air quality evaluation of an Initial Study identifies potentially significant air quality impacts then further environmental review is required. Lead Agencies and project proponents are encouraged to utilize computer tools, such as, CalEEMod to analyze direct and indirect sources of emissions. Such a review may result in the development of a Mitigated ND or an EIR. An EIR will require the project proponent to evaluate the identified adverse air quality impacts through the process of a Comprehensive Air Quality Analysis Report.

CEQA requires full disclosure of all the potential air pollutants and/or toxic air emissions from a project. As stated above, the air quality analysis conducted during the Initial Study phase, should help to identify these potential emissions. Typically, the Initial Study is in

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13 CEQA Guidelines §15064.7

14 Found in Article 5 section 15060 (d) of the CEQA guidelines.

15 CEQA Guidelines §15063 (c) (5) provides that an initial study provide "...documentation of the factual basis for the finding.." and §15063 (d) (3) provides "that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries."

16 Before the release of the ND the Lead Agency must determine that there is no substantial evidence, in light of the whole record before the agency, that the project without mitigation may have a potentially significant impact on air quality.

the form of an "Environmental Checklist."[17] CEQA included criteria in the "Environmental Checklist Form," where by a project will be deemed to have a "potentially significant impact" on air quality if it:

a) Conflict[s] with or obstruct[s] implementation of the applicable air quality plan.
b) Violate any air quality standard or contribute to an existing or projected air quality violation.
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors.)
d) Expose the public (especially schools, day care centers, hospitals, retirement homes, convalescence facilities and residences) to substantial pollutant concentrations.
e) Create objectionable odors affecting a substantial number of people.

Similarly, the ICAPCD has established significance thresholds to assist Lead Agencies in determining whether a proposed project may have a significant air quality impact. Therefore, projects whose emissions are expected to meet or exceed the thresholds of significance for the operational phases of a project will be deemed to have a potentially significant adverse impact on air quality. Another tool available for Lead Agencies and project proponents is the use of project screening, discussed below.

It is not the intent of this guidance handbook, including the thresholds or procedures found therein, to apply to projects, which are specifically exempt within the CEQA Guideline, Sections 15260-15285 (Statutory Exemptions) and 15300-15332 (Categorical Exemptions).

4.1 Thresholds of Significance for Project Operations

In order to assist Lead Agencies in making a determination on the type of environmental document to prepare, this section, provides quantitative criteria in the form of thresholds to help in the assessment of the environmental impacts. When the preliminary analysis of a project indicates that the proposed project may potentially be near the thresholds identified below, the Lead Agency may consider the project as having a potentially significant impact. Please refer to section 4.2 Screening Criteria for Project Impacts for further information. However, further analysis would then be required to help identify the level of emissions and the subsequent level of impact. In addition, the emission analysis should explore any mitigating characteristics of the project or site which should help the

[17] CEQA Guidelines Appendix G

Lead Agency identify any feasible mitigation measures. That is, an Initial Study should analyze all phases of a development project including, operational (long-term) and cumulative impacts so as to determine the level of significance.[18] As mentioned above, when the air quality impacts of a project are found to be insignificant then a Lead Agency may determine that a ND is appropriate. However, when the air quality impacts of a project are considered significant because one or more of the thresholds are met or exceeded then a determination by the Lead Agency of either a Mitigated ND or an EIR may be made.[19]

Because the operational phase of a proposed project has the potential of creating lasting or long term impacts on Air Quality, it is important that a proposed development evaluate the potential impacts carefully. Therefore, the results of an initial study should compare all operational emissions of a project, including motor vehicle, area source and stationary or point sources to the thresholds in Table 1 below. Table 1 provides general guidelines for determining the significance of impacts and the recommended type of environmental analysis required based on the total emissions that are expected from the operational phase of a project. For industrial development projects, the thresholds in Table 1 should be used only to determine significance of the impact from mobile source emissions attracted to the stationary source. Therefore, Table 1 would not be used to determine significance for the air emissions associated with the stationary source, including off-road mobile emissions produced within the stationary source. Those stationary source emissions are already subject to mitigation according to Rule 207, New and Modified Stationary Source Review and Rule 201 and must therefore be excluded. However, the Lead Agency has the authority to request a comprehensive air quality analysis or an EIR to address the impact of the stationary source regardless of the threshold in table 1, according to CEQA guidelines.

[18] CEQA Guidelines §15063 and §15064

[19] An MND is appropriate when impacts can be made insignificant due to the imposition of mitigation measures.

Table 1, Thresholds of Significance for Project Operations

Pollutant	Tier I	Tier II
NOx and ROG	**Less than 137 lbs/day**	**137 lbs/day and greater**
PM_{10} and SOx	**Less than 150 lbs/day**	**150 lbs and greater**
CO and $PM_{2.5}$	**Less than 550 lbs/day**	**550 lbs/day and greater**
Level of Significance	**Less Than Significant**	**Significant Impact**
Level of Analysis	**Initial Study**	**Comprehensive Air Quality Analysis Report**
Environmental Document	**Negative Declaration**	**Mitigated ND or EIR**

Tier I. Less than 137 lbs/day of NOx or ROG; less than 150 lbs/day of PM_{10} or SOx; or less than 550 lbs/day of CO or $PM_{2.5}$

Any proposed residential, commercial, or industrial development with a potential to emit less than 137 lbs/day of NOx or ROG; less than 150 lbs/day of PM_{10} or SOx; or less than 550 lbs/day of CO or $PM_{2.5}$ may potentially have an adverse impact on local air quality. From the ICAPCD's perspective residential, commercial and industrial developments with a potential to emit below this level will ***not*** be required to develop a Comprehensive Air Quality Analysis Report or an EIR. However, an Initial Study would be required to help the Lead Agency determine whether the project would have a less than significant impact. It must be mentioned that the determination of a "less than significant" impact is distinguished from a "no impact" determination in that the air quality analysis conducted during the Initial Study would reveal that the operational phase of a proposed project would in fact have a potential air quality impact which would not meet the established thresholds for the operational phase. A "no impact" determination would arise when the air quality analysis conducted during the Initial Study would reveal no potential air quality impacts. Further, in keeping with the requirements of CEQA and as a point of clarification, a "No Impact" determination must be "adequately supported by the information sources a Lead Agency cites."[20]

In any case, the Lead Agency is required by CEQA to disclose the identified environmental effects and the ways in which the environmental effects will be mitigated to achieve a level of less than significant. ***To achieve a level of insignificance the Lead Agency should require the implementation of all feasible standard mitigation measures listed in Section 7.2.***[21] It is important to note that the measures identified in Section 7.2

[20] CEQA Guidelines Appendix G "Environmental Checklist Form."

[21] CEQA Guidelines §15364 states: "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

do not represent a comprehensive list of all mitigation measures. Alternative mitigation measures may be proposed by the project proponent, the Lead Agency or the ICAPCD. The ICAPCD requires that alternative mitigation measures be fully documented with a copy of the documentation attached to the Initial Study. In addition, for some residential and commercial development projects, the developer may be required to implement off-site mitigation measures in order to further reduce the air quality impacts. All residential and commercial projects are required to abide by off-site mitigation requirements under section 7.4

Tier II. 137 lbs/day or greater of NOx or ROG; 150 lbs/day or greater of PM_{10} or SOx; or 550 lbs/day or greater of CO or $PM_{2.5}$

Any proposed residential, commercial, or industrial development with a potential to meet or exceed the 137 lbs/day of NOx or ROG; 150 lbs/day of PM_{10} or SOx; or 550 lbs/day of CO or $PM_{2.5}$ is considered to have a significant impact on regional and local air quality. ***Therefore, Tier II projects are required to implement all standard mitigation measures as well as all feasible discretionary mitigation measures. These measures must be listed and incorporated into the environmental document, which is prepared by the Lead Agency.*** Typically, Tier II projects are required, by the Lead Agency, to prepare an EIR however, should a Lead Agency exempt a project from the development of an EIR **the ICAPCD requires, at a minimum, a Comprehensive Air Quality Analysis Report.** A properly developed Comprehensive Air Quality analysis Report will identify the significant air quality impacts and the required mitigation measures associated with the project. Please refer to Section 6 of this handbook for a discussion on the requirements of a Comprehensive Air Quality Analysis Report. A menu of standard and discretionary mitigation measures are listed in Sections 7.2 and 7.3. These mitigation measures serve to provide the project proponent with feasible measures to help reduce the air quality impacts identified in the Comprehensive Air Quality Analysis Report. In addition, residential, commercial and industrial development projects may be required to implement off-site mitigation measures in order to further reduce the air quality impacts. All residential, commercial and industrial projects are required to abide by off-site mitigation requirements under Section 7.4

4.2 Construction Emissions for Tier I Projects

It is not uncommon for construction related emissions, which are generally temporary in nature, to have a temporary adverse impact on air quality. Construction, by its very nature may produce a variety of emissions however particulate matter (PM_{10}) is the pollutant of greatest concern. Past experience has shown that the emissions from construction can cause substantial increases in localized concentrations of PM_{10}. The most common activities associated with construction involve site preparation, earthmoving activities and general construction. These activities include, but are not limited to, demolition, grading, excavation, cut and fill operations, trenching, soil compaction, land clearing, grubbing and the addition of improvements such as roadway surfaces, structures and facilities. These common construction activities generate emissions from:

1. Fuel combustion from mobile heavy-duty diesel and gasoline powered equipment.
2. Portable auxiliary equipment
3. Worker commuter trips
4. Fugitive dust from soil disturbance.

While construction PM_{10} emissions can vary greatly depending on the phase of the construction, level of activity and other factors, there are feasible mitigation or control measures, which can be reasonably implemented to significantly reduce PM_{10} emissions. Because particulate emissions from construction activities have the potential of leading to adverse health effects as well as nuisance concerns, such as reduced visibility, all projects are required to mitigate construction impacts by regulation. Section 7.1 represents a summary of standard mitigation measures for the control PM_{10} as adopted by the ICAPCD in a set of rules, collectively known as Regulation VIII. Another source of construction related emissions comes from the use of diesel powered construction equipment which has been known to produce ozone precursor emissions and combustion related particulate emissions. To help projects address these emissions Section 7.1 also includes standard mitigation measures for construction equipment.

The approach of the CEQA analyses for construction particulate matter impacts should be qualitative as opposed to quantitative (Tier II projects please refer to Section 6). While a Lead Agency may elect to quantify construction emissions, the ICAPCD recommends the implementation of effective and comprehensive mitigation measures as found in Section 7.1. ***In any case, regardless of the size of the project, the standard mitigation measures for construction equipment and fugitive PM_{10} must be implemented at all construction sites. The implementation of discretionary mitigation measures, as listed in Section 7.1, apply to those construction sites which are 5 acres or more for non-residential developments or 10 acres or more in size for residential developments.*** The mitigation measures found in Section 7.1 are intended to be a menu of feasible mitigation measures they are not intended to be an all inclusive comprehensive list of all mitigation measures. Alternatives may be proposed by the Lead Agency, a Developer or the ICAPCD however, the alternatives must produce the same level of mitigation. In addition, the ICAPCD requires documentation of all alternative mitigation measures and a copy of the documentation should be attached to the Initial Study.

4.3 Screening Criteria for Project Impacts

During the preliminary analysis of a project, the Lead Agency may utilize the project screening criteria as a simple indication of whether a proposed project may meet or exceed the operational thresholds found in Section 4.1. That is, Table 2 may serve as an indicator to the Lead Agency of any further analysis, which may be required, such as an initial study and/or a Comprehensive Air Quality Analysis Report. However, the Lead Agency should note that Table 2 is not intended to be comprehensive but rather a guiding tool.[22] Should Table 2 indicate that the proposed project may potentially exceed the operational thresholds then the Lead Agency has discretionary authority to require either a Comprehensive Air Quality Analysis Report or an EIR. The criteria used to evaluate air emissions associated with residential and commercial projects is based primarily on the combustion emissions generated by motor vehicles and area source emissions (paved and unpaved roads, construction projects, open areas, etc.) The CalEEMod model was used to evaluate the emissions associated with these projects[23]. The following list is not the comprehensive and should be used as general guidance only. As mentioned above, the Lead Agency is encouraged to develop a more refined analysis of the air quality impacts that are specific to a particular project, especially for those proposed projects, which exceed the screening thresholds. The latest CalEEMod model is recommended for use in the evaluation of air quality impacts.

Consultation between the Lead Agency and the ICAPCD is strongly recommended for those development projects, which are not represented in Table 2. Some examples of the type of projects which are not represented are General plans, Specific Plans and/or Enterprise Zones. For mixed use projects, it is strongly recommended by the ICAPCD that these types of projects perform a CalEEMod model on the whole of the project comparing the results to the thresholds found in Table 1. In any event, the intent of the consultation is to provide the Lead Agency with helpful information on the applicability of a Comprehensive Air Quality Analysis Report or an EIR on proposed projects.

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22 There are other air quality issues, such as high CO concentrations, odors, toxics and cumulative impacts, which must be considered when evaluating a project's potential for causing adverse air quality impacts.

23 CalEEMod is a planning tool for estimating vehicle travel, fuel use and resulting emissions related to land use projects. The model is used to calculate emissions of ROG, CO, NOX and PM10 from vehicle use associated with specific construction developments.

Table 2, Screening Criteria for Project Air Quality Impacts

Land Use	Units of Measure	Trip Generation Rate(1)	Project Size which Would Generate Air Emissions Greater than the Threshold Limit(2)
Single Family	Dwelling Unit	9.57	825 Units
Apartments Mid Rise	Dwelling Unit	5.76	1,700 Units
Condominiums General	Dwelling Unit	6.90	1,650 Units
Condominiums High Rise	Dwelling Unit	5.26	1,650 Units
Mobile Home Park	Dwelling Unit	4.99	2,300 Units
Convenience Market (24 hour)	1,000 sq ft	737.99	20,500 sq ft
Convenience Market w/gas pumps	1,000 sq ft	845.60	14,500 sq ft
Supermarket	1,000 sq ft	102.24	78,000 sq ft
Warehouse	1,000 sq ft	2.59	660,000 sq ft (90% HHD, 5% LDA, 5% LDT1)

Source: CalEEMod, version 2016.3.2-programmed by Trinity using Microsoft SQL Compact Edition in conjunction with a Visual Basic Graphical User interface (GUI)

(1) Trip generation rates in this table are from the Institute of Transportation Engineers (ITE) Trip Generation Rate Tables

(2) Emissions are defined as NOx, ROG, CO or PM_{10}

4.4 Consistency with the Most Recent Clean Air Plan for Imperial County

Within the CEQA guidelines, Section 15125 (d) requires that an EIR discuss consistency between the proposed project and the applicable regional plans. Section 6 of this handbook, similarly, requires that a Comprehensive Air Quality Analysis Report discuss the consistency between the proposed project and the most recent regional plans. A consistency analysis with the Clean Air Plans is required for large residential developments and large commercial developments which are required to develop an EIR and/or a Comprehensive Air Quality Analysis Report. The EIR and/or a Comprehensive Air Quality Analysis Report of a proposed project should demonstrate compliance with the most recent ozone Air Quality Attainment Plan (AQAP) and PM_{10} State Implementation Plan (SIP). The EIR and/or a Comprehensive Air Quality Analysis Report of a proposed project should also demonstrate compliance not only with the Imperial County Rules and Regulations but also those of the State and Federal Regulations.

4.5 Comparison of Predicted Ambient Pollutant Concentrations to State and Federal Air Quality Standards.

To help protect the public health and welfare, the State and Federal governments established Ambient Air Quality Standards for certain pollutants, known as criteria pollutants. When a large residential and/or commercial project is deemed to have the potential to cause an exceedance of the Ambient Air Quality Standards an ICAPCD air quality dispersion model may be required. A project is considered to have a significant impact if the emissions associated with the project are predicted to cause or contribute to a violation of any Ambient Air Quality Standard. The petitioner should identify in the EIR or the Comprehensive Air Quality Analysis Report any on-site and off-site control measures which reduce the concentration of air emissions below the Ambient Air Quality Standards.

4.6 Special Conditions

Project impacts may also be considered significant if one or more of the following special conditions apply:

a. Development projects which locate in close proximity to already existing industrial type operations which have the potential to emit toxic or hazardous air pollutants, even at a very low level of emissions, may be considered significant because of the increased cancer risk to the in coming population. This is also true of development projects which have the potential to emit toxic or hazardous air pollutants and are located in close proximity to sensitive receptors. Such projects may be required to prepare a health risk assessment to determine the potential level of risk associated with the operation. The ICAPCD should be consulted on any project with the potential to emit toxic or hazardous air pollutants. In addition, pursuant to the requirements of California Health and Safety Code 42301.6 (AB 3205) and Public Resources Code Section 21151.8, subdivision (a)(2), any proposed industrial or commercial project site located within 1000 feet of a school must be referred to the ICAPCD for review.

b. If a determination is made that a development project has the potential to cause a nuisance problem which impacts a considerable number of people, the project may be considered as having a significant effect. There are projects that may emit pollutants in concentrations that would not otherwise be significant except as a nuisance, as an example projects which emit hydrogen sulfide.

   If a project is proposed within the screening level distance in Table 3, the ICAPCD should be contacted for information regarding potential odor problems. For projects that involve new receptors located near an existing odor source(s), a public information reviewing request should be submitted to the ICAPCD for a review of any existing odor complaints and for the nearest odor emitting facility(ies).

Table 3, Project Screening Distances for Potential Odor Sources

Type of Operation	Project Screening Distance
Wastewater Treatment Plant	1 mile
Sanitary Landfill	1 mile
Composting Station	1 mile
Feedlot	1 mile
Asphalt Plant	1 mile
Painting/Coating Operations (auto body shops)	1 mile
Rendering Plant	1 mile

5. Methods for Calculating Project Emissions

Air pollutant emissions from an urban development can derive from a variety of sources, including, but not limited to, motor vehicles, natural gas use, electric energy use, combustion-powered utility equipment, paints and solvents, equipment or operations used by various commercial and industrial facilities, construction and demolition equipment and operations, as well as various other sources. The amount and type of emissions produced, and their potential to cause significant impacts, depends on the type and level of development proposed. The following sections describe the recommended methods generally used to calculate emissions from residential and commercial projects.

5.1 Motor Vehicle Emissions

Motor vehicles are the primary source of long-term emissions caused by residential and commercial land uses. These land uses often do not directly emit significant amounts of air pollutants, but cause or attract motor vehicle trips that do produce emissions. Such land uses are referred to as indirect sources.

Motor vehicle emissions associated with indirect sources should be calculated for projects, which exceed the screening criteria listed in Table 2, Screening Criteria for Project Air Quality Impacts. Calculations should be based on the most recent vehicle emission factors (EMFAC series) provided by the California Air Resources Board (CARB), and trip generation factors published by the Institute of Transportation Engineers (ITE). These factors have been incorporated into a simple computer model called CalEEMod. CalEEMod incorporates the EMFAC emission factors and ITE trip rates.

CalEEMod is a planning tool for estimating vehicle travel, fuel use and resulting emissions related to land use projects. The model calculates emissions of ROG, CO, NOX and PM10 from vehicle use associated with new or modified development such as shopping centers, housing, commercial services and industrial land uses. CalEEMod allows users to compare motor vehicle emissions as a function of the number of vehicle trips associated with a given land use and the vehicle miles traveled for each particular type of trip taken. The calculated emissions can then be used as a basis for project screening.

User-specific inputs to the model include project type, year, season, trip speed and other parameters. The default values should be used when no other project specific information is available. If different values are used, justification and documentation for the inputs should be provided on the appropriate document.

The ICAPCD recommends using the most recent version of CalEEMod and the corresponding version of EMFAC. A link to the most recent version of CalEEMod can be accessed from the California Air Pollution Control Officers Association (CAPCOA) website at www.capcoa.org or at www.caleemod.com. As an alternative, the petitioner may choose to manually evaluate the air emissions associated with a particular project.

A thorough emissions analysis should be performed on all relevant emission sources, using emission factors from EPA document AP-42 "Compliance of Air Pollutant Emission Factors", the latest version of EMFAC, or other approved source(s). The emission analysis should include calculations for estimated emissions of all criteria pollutants and toxic substances released from the project. Documentation of emission factors and all assumptions should be provided.

6. Air Quality Analysis

This section is intended to help project proponents understand the application of an Air Quality Analysis. Typically, during the initial study portion of a proposed project a preliminary Air Quality Analysis, such as CalEEMod, is conducted to help reveal potential air quality impacts. When indications of the analysis demonstrates that a project may potentially have significant impacts then further review is required to identify those impacts and to determine the appropriate mitigation measures. As mentioned before a Lead Agency has the discretionary authority to determine the type of environmental documentation which is required. There is a distinction; the Lead Agency may only require a Comprehensive Air Quality Analysis Report as opposed to an EIR. However, even when a Lead Agency does not require an EIR and the proposed project either meets or exceeds those significance criteria mentioned above a Comprehensive Air Quality Analysis Report is still required. For all other projects, a preliminary Air Quality Analysis such as an initial study with CalEEMod is sufficient enough to identify potential impacts and their respective mitigation measures.

6.1 Comprehensive Air Quality Analysis Report

A Comprehensive Air Quality Analysis Report should address the air quality impacts from both the construction and operational phases of a proposed project. The analysis should include, at a minimum, all of the following:

a. A description of the existing air quality and related emissions within the impacted area, including the attainment status of the ICAPCD relative to State and Federal air quality standards and any existing regulatory restrictions to development. Included should be data from the closest air quality monitoring station(s) to the project site. The most recent Clean Air Plans should be consulted for applicable information.

b. A description of criteria and toxic air pollutants emitted from the project and their primary health impacts. The description shall include short and long term health effects from exposure of elevated levels of these pollutants. As well as, a description of the impact upon encroaching development from the emissions of toxic and criteria pollutants from existing facilities. In addition, this section shall describe how increase's in these pollutants impact the health of any susceptible group.

c. A thorough emission analysis should be performed on all relevant emission sources using the latest version of CalEEMod or other ICAPCD approved source(s). The emission analysis should include calculations for estimated emissions of all criteria pollutants and toxic substances released from the anticipated land mix on a daily and yearly basis. Documentation of emission factors and all assumptions (i.e. anticipated land uses, average daily trip rates from generation studies, etc) should be provided as an appendix to the Comprehensive Air Quality Analysis Report.

d. The Comprehensive Air Quality Analysis Report should include a range of alternatives to the proposed project that could effectively minimize air quality impacts, if feasible. A thorough emissions analysis should be conducted for each of the proposed alternatives identified. The project proponent and/or interested parties should contact the ICAPCD if additional information and guidance is required. All calculations and assumptions used should be fully documented as an appendix to the Comprehensive Air Quality Analysis Report.

e. For those projects with a potential to generate heavy volumes of traffic and which can lead to high levels of CO, hot spot modeling should be used to determine compliance with the state CO standard at the intersections and/or roadway links that are considered most impacted by the proposed project. The "hot spots" should be determined according to the traffic impact analysis. One of the most common models is CALINE4, developed by and available from the California Department of Transportation; however, any other ICAPCD approved hot spot model can be used. If determinative results from the air modeling indicate a significant impact, mitigation measures must be identified and incorporated into the appropriate environmental document. The effectiveness of any proposed mitigation measure(s) should be quantified by estimating the effects of the measure(s) on the volume of traffic and/or speeds, and CO concentrations.

f. The Comprehensive Air Quality Analysis Report should include a section describing the cumulative impacts from all identified existing and proposed future projects. Under CEQA "cumulative impacts" refers to two or more individual effects which when considered together are considerable or which compound or increase other environmental impacts. CEQA also explains that any cumulative impact analysis should consider the incremental impact of a project added to other closely related past, present and reasonably foreseeable probable future projects.[24] Lead Agencies should utilize the threshold limits in Section 4. In addition, any cumulative CO analysis should be accounted for in a CO hotspot analysis described above.

g. The Comprehensive Air Quality Analysis Report should include an evaluation of the projects consistency with the Clean Air Plan and applicable ICAPCD Rules and Regulations.

h. Mitigation measures should be recommended, as appropriate, following the guidelines of this handbook.

i. Construction Emission Analysis

As mentioned previously, construction-related emissions are generally short-term in duration, but may still cause temporary adverse air quality impacts. In some cases, the emissions from construction represent the largest air quality impact associated with a given project. The most common activities associated with construction involve site preparation, earthmoving activities and general construction. These activities include but are not limited to, demolition, grading, excavation, cut and fill operations, trenching, soil compaction, land clearing, grubbing and the addition of improvements

[24] CEQA Guidelines section 15355

such as roadway surfaces, structures and facilities. These common construction activities generate emissions from

1. Fuel combustion from mobile heavy-duty diesel and gasoline powered equipment.
2. Portable auxiliary equipment
3. Worker commuter trips
4. Fugitive dust from soil disturbance.

The types of pollution that construction activities can generate include PM_{10}, ROG, NOx, CO and possibly air toxics. However, with respect to general construction activities, PM_{10} is the pollutant of greatest concern. Construction related PM_{10} emissions can cause a substantial increase in localized concentrations, which under certain circumstances can contribute to violations of the state and federal ambient air quality standards. As such, the Imperial County adopted Regulation VIII, which contains a variety of feasible fugitive dust control measures to help bring the ICAPCD into compliance with the National Ambient Air Quality Standards (NAAQS). Therefore, implementation of the Regulation and its measures apply to any proposed project regardless of its determined level of significance or size.

The emissions from construction activities, such as fugitive PM_{10} and exhaust emissions from construction equipment, must be quantified and identified in an EIR or a Comprehensive Air Quality Analysis Report. Table 4 below is intended to serve as a guide for project developers and interested parties in determining the recommended type of mitigation measures.

Table 4, Thresholds of Significance for Construction Activities

Pollutant	Thresholds
PM_{10}	150 lbs/day
ROG	75 lbs/day
NOx	100 lbs/day
CO	550 lbs/day

PROJECTS BELOW THE THRESHOLD OF SIGNIFICANCE FOR CONSTRUCTION

For those residential and commercial projects which fall below the level of significance for construction adherence to the most current rules adopted for the control of fugitive dust is mandatory. In addition, the ICAPCD requires the use of the standard mitigation measures for construction equipment and fugitive dust found under Section 7.1 of this handbook. Please note that the mitigation measures listed are not intended to be all inclusive. Alternative mitigation measures may be proposed either by the project proponent, the Lead Agency or the ICAPCD. In any event, the ICAPCD requires that any alternative mitigation measure be fully documented with a copy of the documentation attached to the Initial study.

PROJECTS GREATER THAN THE THRESHOLD OF SIGNIFICANCE FOR CONSTRUCTION

Residential and commercial projects which are greater than the level of significance for construction may have a significant impact on local and, under certain circumstances, regional air quality. These projects must conduct a construction analysis that appropriately reflects the identified potential construction air quality impacts. In addition, the quantification of construction emissions should be utilized to help define the analysis of a health risk assessment. A health risk assessment requires a diesel exhaust screening level which should be performed in consultation with ICAPCD engineering staff. Projects that are prone to a significant use of heavy-duty diesel equipment and that are within areas prone to human exposure will be required to perform a diesel exhaust screening level. Factors considered by the ICAPCD staff when determining if a screening risk analysis is necessary include the expected emissions from diesel equipment, the location of the project and the distance to sensitive receptors.

In order to help reduce or eliminate construction impacts these projects are required to implement standard, discretionary and enhanced mitigation measures found in Section 7.1 for construction equipment and fugitive PM10. In addition, a health risk assessment as described above is also required.

In order to help Lead Agencies identify feasible mitigation measures for those projects which have been deemed to have a significant environmental impact, a mitigation measures section has been added to this handbook. Section 7, Mitigation Measures, includes a menu of mitigation measures for the construction and operational phases of a project. Subsection 7.1 lists the feasible mitigation measures that are recommended for the construction phase of the project while Subsection 7.2 lists the feasible mitigation measures for the operational phase of a project. Because Section 7 in its entirety does not represent a comprehensive list of all mitigation measures the project proponent or the Lead Agency may propose alternative mitigation measures that are capable of providing the same level of mitigation. The ICAPCD requires documentation of all alternative mitigation measures and a copy of the documentation should be attached to the Initial Study.

In no way does this CEQA handbook absolve or otherwise preclude a project from compliance with any and all appropriate Imperial County Air Pollution Control District Rules and Regulations. All projects are required to comply with applicable ICAPCD rules and regulations. For the construction phase of a project this means that compliance with the requirements of Regulation VIII is absolute.

7. Mitigation Measures

Under CEQA, a Lead Agency must mitigate or avoid significant environmental impacts associated with a proposed project. Projects which have been deemed to have a significant environmental impact must identify feasible mitigation measures or alternatives to reduce the impacts below a level of significance. Thus, an EIR must not only identify significant environmental impacts but the EIR must attempt to mitigate or avoid those significant impacts by implementing feasible mitigation measures. Similarly, a MND should identify mitigation measures and include those measures as part of the project to reduce impacts on air quality to a less than significant. To achieve a level of insignificance, a project must reduce its air quality impacts below the threshold levels indicated in Section 4. In order to help Lead Agencies make proper discretionary judgments regarding the feasibility of the mitigation measures pertaining to air quality the following information is provided.

This section contains a menu of mitigation measures, which may be used by project proponents and local agencies, to mitigate air quality impacts resulting from any proposed project. **By definition an air quality mitigation measure must go beyond already existing requirements and regulations**. Federal, State and local level regulatory programs currently exist to reduce air pollutant emissions from a variety of sources. Even with these regulatory programs additional mitigation measures are needed to supplement and compliment already existing regulations to help eliminate air quality impacts.

7.1 Construction Equipment and Fugitive PM_{10} Mitigation Measures

Construction emissions, while traditionally temporary in nature, have been known to cause adverse air quality impacts. In fact, in some cases, construction emissions tend to represent the largest portion of the air quality impacts associated with a given project. Emissions resulting from the common activities associated with general construction and construction equipment both contribute to elevated concentrations of PM_{10}, CO and ozone precursor emissions.

Below are a number of fugitive dust mitigation measures, which have been shown to significantly reduce emissions. The following examples are not considered all inclusive. Use of alternative mitigation measures may also be considered if the appropriate documentation is provided.

In no way does compliance with Regulation VIII, Fugitive Dust Control measures alleviate or otherwise preclude a project from compliance with any and all other applicable laws, ordinances, resolutions, rules, statutes or other local, state or federal regulations or requirements.

REGULATION VIII - FUGITIVE DUST CONTROL MEASURES (Most recently adopted) – All construction sites, regardless of size, must comply with the requirements contained within Regulation VIII. Although compliance with Regulation VIII does not constitute mitigation under the reductions attributed to environmental impacts its main purpose is to reduce the amount of PM_{10} entrained into the atmosphere as a result of anthropogenic (man-made) fugitive dust sources. Therefore, under all preliminary modeling a presumption is made that all projects are in compliance with Regulation VIII.

Standard Mitigation Measures for Fugitive PM_{10} Control

a. All disturbed areas, including Bulk Material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.

b. All on site and off site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

c. All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

d. The transport of Bulk Materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of Bulk Material. In addition, the cargo compartment of all Haul Trucks is to be cleaned and/or washed at delivery site after removal of Bulk Material.

e. All Track-Out or Carry-Out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an Urban area.

f. Movement of Bulk Material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.

g. The construction of any new Unpaved Road is prohibited within any area with a population of 500 or more unless the road meets the definition of a Temporary Unpaved Road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

In order to provide a greater degree of PM_{10} reductions, above that required by Regulation VIII, the ICAPCD recommends the following:

Discretionary Mitigation Measures for Fugitive PM_{10} Control

a. Water exposed soil with adequate frequency for continued moist soil.

b. Replace ground cover in disturbed areas as quickly as possible

c. Automatic sprinkler system installed on all soil piles

d. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

e. Develop a trip reduction plan to achieve a 1.5 AVR for construction employees

f. Implement a shuttle service to and from retail services and food establishments during lunch hours

Although the preceding discussion of construction impacts and mitigation measures are primarily focused on PM_{10} emissions from fugitive dust sources, Lead Agencies should also seek to reduce emissions from construction equipment exhaust. Because of the availability of new control devices, required in the manufacturing of PM oxidation catalysts and NOx absorbers, substantial reductions in PM and NOx emissions from diesel engines is achievable. These new retrofit kits and in some cases new original equipment require the use of ultra low sulfur diesel in order to be effective.

Standard Mitigation Measures for Construction Combustion Equipment

a. Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel powered equipment.

b. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.

c. Limit, to the extent feasible, the hours of operation of heavy duty equipment and/or the amount of equipment in use

d. Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)

To help provide a greater degree of reduction of PM emissions from construction combustion equipment the ICAPCD recommends the following enhanced measures.

Enhanced Mitigation Measures for Construction Equipment

a. Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways

b. Implement activity management (e.g. rescheduling activities to reduce short-term impacts)

7.2 Standard Mitigation Measures for Project Operations

These standard air quality mitigation measures have been separated according to land use and mitigation type.

According to Table 1, Tier I, projects generating less than 137 lbs/day of NOx or ROG; less than 150 lbs/day of PM_{10} or SOX; or less than 550 lbs/day of CO or $PM_{2.5}$, the Initial Study should require implementation of all the Standard Mitigation Measures in order to help mitigate or reduce the air quality impacts to a level of insignificance. However, simple implementation of the mitigation measures does not guarantee that the project will be insignificant. The insignificance must be determined by the results of the Initial Study.

According to Table 1, Tier II, projects generating 137 lbs/day or greater of NOx or ROG; 150 lbs/day or greater of PM_{10} or SOX; or 550 lbs/day or greater of CO or $PM_{2.5}$, the EIR or Comprehensive Air Quality Analysis Report should select and implement all feasible and practicable measures from the discretionary list, in addition to the Standard Mitigation Measures.

RESIDENTIAL PROJECTS

Standard mitigation measures for residential projects include the following site design and energy efficiency standards:

Standard Site Design Measures

a. Link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel;

b. Allocate easements or land dedications for bikeways and pedestrian walkways;

c. Provide continuous sidewalks separated from the roadway by landscaping and on-street parking. Adequate lighting for sidewalks must be provided, along with crosswalks at intersections;

d. Bicycle storage at apartment complexes or condos without garages.

Standard Energy Efficiency Measures

a. Measures which meet mandatory, prescriptive and/or performance measures as required by Title 24.

COMMERCIAL PROJECTS

Standard mitigation measures for commercial projects include the following site design and energy efficiency standards:

Standard Site Design Measures

a. Provide on-site bicycle lockers and/or racks;

b. Provide on-site eating, refrigeration and food vending facilities to reduce lunchtime trips;

c. Provide shower and locker facilities to encourage employees to bike and/or walk to work;

d. Provide for paving a minimum of 100 feet from the property line for commercial driveways that access County paved roads as per County Standard Commercial Driveway Detail 410B (formerly SW-131A).

Standard Energy Efficiency Measures

a. Measures which meet mandatory, prescriptive and/or performance measures as required by Title 24.

7.3 Discretionary Mitigation Measures

The discretionary mitigation measures listed in this section have been separated according to land use and mitigation type. It is important to note that the measures identified here do not represent a comprehensive list of all mitigation measures possible. Project proponents are encouraged to propose other alternatives that are capable of providing the same level of mitigation.

RESIDENTIAL PROJECTS

Discretionary Site Design Measures

a. If the project is located on an established transit route, improve public transit accessibility by providing transit turnouts with direct pedestrian access to project.

b. For bus service within a ¼ mile of the project provide bus stop improvements such as shelters, route information, benches and lighting.

c. Increase street tree planting.

d. Outdoor electrical outlets to encourage the use of electric appliances and tools.

e. Provide bikeway lanes and/or link new comparable bikeway lanes to already existing lanes.

f. Increase the number of bicycle routes/lanes.

g. Provide pedestrian signalization and signage to improve pedestrian safety.

h. Synchronize traffic lights on streets impacted by development

Discretionary Energy Efficiency Measures

a. Use roof material with a solar reflectance value meeting the EPA/DEO Energy Star® rating to reduce summer cooling needs.

b. Use high efficiency gas or solar water heaters.

c. Use built-in energy efficient appliances.

d. Use double-paned windows.

e. Use low energy street lighting (i.e. sodium).

f. Use energy efficient interior lighting.

g. Use low energy traffic signals (i.e. light emitting diode).

h. Install door sweeps and weather stripping if more efficient doors and windows are not available.

COMMERCIAL PROJECTS

Discretionary Site Design Measures

a. Increase street tree planting

b. Shade tree planting in parking lots to reduce evaporative emissions from parked vehicles.

c. Increase number of bicycle routes/lanes.

d. If the project is located on an established transit route, improve public transit accessibility by providing transit turnouts with direct pedestrian access to protect or improve transit stop amenities.

e. For bus service within a ¼ mile of the project provide bus stop improvements such as shelters, route information, benches and lighting

f. Implement on-site circulation design elements in parking lots to reduce vehicle queuing and improve the pedestrian environment.

g. Provide pedestrian signalization and signage to improve pedestrian safety.

h. Synchronize traffic lights on streets impacted by development

Discretionary Energy Efficiency Measures

a. Use roof material with a solar reflectance value meeting the EPA/DOE Energy Star® rating to reduce summer cooling needs.

b. Use built-in energy efficient appliances, where applicable.

c. Use double-paned windows.

d. Use low energy parking lot and street lights (i.e. sodium).

e. Use energy efficient interior lighting.

f. Use low energy traffic signals (i.e. light emitting diode).

g. Install door sweeps and weather stripping if more efficient doors and windows are not available.

h. Install high efficiency gas/electric space heating.

INDUSTRIAL PROJECTS

a. Implement carpool/vanpool programs and incentives (i.e. carpool ride matching for employees, assistance with vanpool formation, provision of vanpool vehicles, etc.)

b. Provide for shuttle/mini bus service such as to establish a shuttle service from residential care areas to the worksite.

c. Provide preferential carpool and vanpool parking

d. Construct transit facilities such as bus turnouts/bus bulbs, benches, shelters, etc if the project is located on an established transit route.

e. Design and locate buildings to facilitate transit access (i.e., locate building entrances near transit stops, eliminate building setbacks, etc.)

f. Provide incentives to employees to take public transportation, walk, bike, etc.

g. Provide pedestrian signalization and signage to improve pedestrian safety.

h. Implement on-site circulation design elements in parking lots to reduce vehicle queing and improve the pedestrian environment.

i. Provide on-site bicycle and motorcycle parking. Such as providing weather-protected bicycle parking for employees.

j. Provide safe, direct access for bicyclists to adjacent bicycle routes.

k. Provide shower and locker facilities to encourage employees to bike and/or walk to work – typically, one shower and three lockers for every 25 employees.

l. Provide on-site eating, refrigeration and food vending facilities to reduce lunchtime trips.

m. Increase street tree planting

n. Measures which meet mandatory, prescriptive and/or performance measures as required by Title 24.

o. Use low emission fleet vehicles such as TLEV, ULEV, LEV, ZEV

p. Install an electrical vehicle charging station with both conductive and inductive charging capabilities.

q. Use built-in energy efficient appliances, where applicable.

r. Use double-paned windows

s. Use low energy parking lot and street lights

t. Use energy efficient interior lighting

7.4 Off-site Mitigation

Off-site mitigation for Commercial and Residential Developments:

Off-site mitigation measures are designed to offset emissions from residential and commercial projects that cannot be fully mitigated with on-site measures. Typically, off-site reductions can occur as a result from either stationary or mobile sources. For example, NOx emissions from increased vehicle trips from a residential development could be reduced by funding the expansion of existing transit services. Rule 310, Operational Development Fee has been adopted by the ICAPCD as a sound method for mitigating the emissions produced from the operations of new development projects throughout the County of Imperial. All project proponents have the option of either providing off-site mitigation or paying an Operational Development Fee. The evaluation process in providing this fee is found within the applicability and administrative requirements of Rule 310

Off-site mitigation for Industrial Projects:

Because industrial development projects are by their very nature much more complex, the evaluation of the air impacts resulting from an industrial development is addressed at two levels: that of the environmental review process and that of the ICAPCD permitting review process. The ICAPCD permitting review process addresses mitigation of air emissions from the Stationary source. Therefore, the ICAPCD has adopted the guidance policy #5 to help Lead Agencies and interested parties in the evaluation of off-site mitigation from mobile sources attracted to the stationary sources.

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Industrial Hemp Processing Facility Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Industrial Hemp Processing Facility
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	4.80
Location	32.68827647610367, -115.50977381813972
County	Imperial
City	Unincorporated
Air District	Imperial County APCD
Air Basin	Salton Sea
TAZ	5611
EDFZ	19
Electric Utility	Imperial Irrigation District
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Light Industry	26.0	1000sqft	0.60	26,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-1-A	Use Electric or Hybrid Powered Equipment
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.88	72.5	6.95	8.95	0.01	0.34	235	236	0.31	23.5	23.8	—	1,624	1,624	0.06	0.04	1.21	1,637
Mit.	0.88	72.5	6.95	8.95	0.01	0.34	235	236	0.31	23.5	23.8	—	1,624	1,624	0.06	0.04	1.21	1,637
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	1.04	0.45	0.56	< 0.005	0.02	12.8	12.8	0.02	1.28	1.30	—	102	102	< 0.005	< 0.005	0.03	103
Mit.	0.06	1.04	0.45	0.56	< 0.005	0.02	12.8	12.8	0.02	1.28	1.30	—	102	102	< 0.005	< 0.005	0.03	103
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.19	0.08	0.10	< 0.005	< 0.005	2.33	2.33	< 0.005	0.23	0.24	—	16.9	16.9	< 0.005	< 0.005	0.01	17.0
Mit.	0.01	0.19	0.08	0.10	< 0.005	< 0.005	2.33	2.33	< 0.005	0.23	0.24	—	16.9	16.9	< 0.005	< 0.005	0.01	17.0
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.88	72.5	6.95	8.95	0.01	0.34	235	236	0.31	23.5	23.8	—	1,624	1,624	0.06	0.04	1.21	1,637
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.06	1.04	0.45	0.56	< 0.005	0.02	12.8	12.8	0.02	1.28	1.30	—	102	102	< 0.005	< 0.005	0.03	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.01	0.19	0.08	0.10	< 0.005	< 0.005	2.33	2.33	< 0.005	0.23	0.24	—	16.9	16.9	< 0.005	< 0.005	0.01	17.0

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.88	72.5	6.95	8.95	0.01	0.34	235	236	0.31	23.5	23.8	—	1,624	1,624	0.06	0.04	1.21	1,637

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.06	1.04	0.45	0.56	< 0.005	0.02	12.8	12.8	0.02	1.28	1.30	—	102	102	< 0.005	< 0.005	0.03	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.01	0.19	0.08	0.10	< 0.005	< 0.005	2.33	2.33	< 0.005	0.23	0.24	—	16.9	16.9	< 0.005	< 0.005	0.01	17.0

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.28	1.88	0.68	4.93	0.01	0.03	35.3	35.3	0.03	5.34	5.37	28.9	1,878	1,907	3.06	0.07	8.80	2,012
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.85	1.46	0.70	2.97	0.01	0.03	35.3	35.3	0.03	5.34	5.37	28.9	1,815	1,844	3.06	0.07	6.82	1,947
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.76	1.37	0.58	2.87	0.01	0.03	25.2	25.2	0.03	3.82	3.84	28.9	1,710	1,739	3.05	0.06	7.39	1,840
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.14	0.25	0.11	0.52	< 0.005	< 0.005	4.60	4.60	< 0.005	0.70	0.70	4.78	283	288	0.50	0.01	1.22	305

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.05	1.02	0.37	3.55	< 0.005	< 0.005	35.3	35.3	< 0.005	5.34	5.35	—	492	492	0.03	0.03	2.03	504
Area	0.20	0.84	0.01	1.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.65	4.65	< 0.005	< 0.005	—	4.67
Energy	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	1,345	1,345	0.10	0.01	—	1,351
Water	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Waste	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	1.28	1.88	0.68	4.93	0.01	0.03	35.3	35.3	0.03	5.34	5.37	28.9	1,878	1,907	3.06	0.07	8.80	2,012
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.82	0.79	0.40	2.71	< 0.005	< 0.005	35.3	35.3	< 0.005	5.34	5.35	—	434	434	0.04	0.03	0.05	444
Area	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	1,345	1,345	0.10	0.01	—	1,351
Water	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Waste	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	0.85	1.46	0.70	2.97	0.01	0.03	35.3	35.3	0.03	5.34	5.37	28.9	1,815	1,844	3.06	0.07	6.82	1,947
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.63	0.61	0.28	2.06	< 0.005	< 0.005	25.2	25.2	< 0.005	3.82	3.82	—	327	327	0.02	0.02	0.63	334
Area	0.10	0.75	< 0.005	0.56	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.29	2.29	< 0.005	< 0.005	—	2.30
Energy	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	1,345	1,345	0.10	0.01	—	1,351
Water	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Waste	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77

Total	0.76	1.37	0.58	2.87	0.01	0.03	25.2	25.2	0.03	3.82	3.84	28.9	1,710	1,739	3.05	0.06	7.39	1,840
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.11	0.05	0.38	< 0.005	< 0.005	4.60	4.60	< 0.005	0.70	0.70	—	54.1	54.1	< 0.005	< 0.005	0.10	55.3
Area	0.02	0.14	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Energy	0.01	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	223	223	0.02	< 0.005	—	224
Water	—	—	—	—	—	—	—	—	—	—	—	1.91	5.90	7.81	0.20	< 0.005	—	14.1
Waste	—	—	—	—	—	—	—	—	—	—	—	2.88	0.00	2.88	0.29	0.00	—	10.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	1.12
Total	0.14	0.25	0.11	0.52	< 0.005	< 0.005	4.60	4.60	< 0.005	0.70	0.70	4.78	283	288	0.50	0.01	1.22	305

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.05	1.02	0.37	3.55	< 0.005	< 0.005	35.3	35.3	< 0.005	5.34	5.35	—	492	492	0.03	0.03	2.03	504
Area	0.20	0.84	0.01	1.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.65	4.65	< 0.005	< 0.005	—	4.67
Energy	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	1,345	1,345	0.10	0.01	—	1,351
Water	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Waste	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	1.28	1.88	0.68	4.93	0.01	0.03	35.3	35.3	0.03	5.34	5.37	28.9	1,878	1,907	3.06	0.07	8.80	2,012
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.82	0.79	0.40	2.71	< 0.005	< 0.005	35.3	35.3	< 0.005	5.34	5.35	—	434	434	0.04	0.03	0.05	444
Area	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	1,345	1,345	0.10	0.01	—	1,351

Water	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Waste	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	0.85	1.46	0.70	2.97	0.01	0.03	35.3	35.3	0.03	5.34	5.37	28.9	1,815	1,844	3.06	0.07	6.82	1,947
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.63	0.61	0.28	2.06	< 0.005	< 0.005	25.2	25.2	< 0.005	3.82	3.82	—	327	327	0.02	0.02	0.63	334
Area	0.10	0.75	< 0.005	0.56	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.29	2.29	< 0.005	< 0.005	—	2.30
Energy	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	1,345	1,345	0.10	0.01	—	1,351
Water	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Waste	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	0.76	1.37	0.58	2.87	0.01	0.03	25.2	25.2	0.03	3.82	3.84	28.9	1,710	1,739	3.05	0.06	7.39	1,840
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.11	0.05	0.38	< 0.005	< 0.005	4.60	4.60	< 0.005	0.70	0.70	—	54.1	54.1	< 0.005	< 0.005	0.10	55.3
Area	0.02	0.14	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Energy	0.01	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	223	223	0.02	< 0.005	—	224
Water	—	—	—	—	—	—	—	—	—	—	—	1.91	5.90	7.81	0.20	< 0.005	—	14.1
Waste	—	—	—	—	—	—	—	—	—	—	—	2.88	0.00	2.88	0.29	0.00	—	10.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	1.12
Total	0.14	0.25	0.11	0.52	< 0.005	< 0.005	4.60	4.60	< 0.005	0.70	0.70	4.78	283	288	0.50	0.01	1.22	305

3. Construction Emissions Details

3.1. Building Construction (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.64	6.66	7.21	0.01	0.34	—	0.34	0.31	—	0.31	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.36	0.39	< 0.005	0.02	—	0.02	0.02	—	0.02	—	71.5	71.5	< 0.005	< 0.005	—	71.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.8	11.8	< 0.005	< 0.005	—	11.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.65	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	179	179	0.01	0.01	0.76	182
Vendor	0.01	0.01	0.20	0.10	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	140	140	< 0.005	0.02	0.37	146
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.06	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.91	8.91	< 0.005	< 0.005	0.02	9.02
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.67	7.67	< 0.005	< 0.005	0.01	8.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.49
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.27	1.27	< 0.005	< 0.005	< 0.005	1.32
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Building Construction (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.64	6.66	7.21	0.01	0.34	—	0.34	0.31	—	0.31	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.36	0.39	< 0.005	0.02	—	0.02	0.02	—	0.02	—	71.5	71.5	< 0.005	< 0.005	—	71.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.8	11.8	< 0.005	< 0.005	—	11.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.65	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	179	179	0.01	0.01	0.76	182
Vendor	0.01	0.01	0.20	0.10	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	140	140	< 0.005	0.02	0.37	146
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.06	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.91	8.91	< 0.005	< 0.005	0.02	9.02
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.67	7.67	< 0.005	< 0.005	0.01	8.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.49
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.27	1.27	< 0.005	< 0.005	< 0.005	1.32
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Paving (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	4.82	5.36	0.01	0.24	—	0.24	0.22	—	0.22	—	823	823	0.03	0.01	—	826
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.02	9.02	< 0.005	< 0.005	—	9.05
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.50
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.15	2.64	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	287	287	0.01	0.01	1.21	291
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.85	2.85	< 0.005	< 0.005	0.01	2.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.48
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Paving (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	4.82	5.36	0.01	0.24	—	0.24	0.22	—	0.22	—	823	823	0.03	0.01	—	826
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.02	9.02	< 0.005	< 0.005	—	9.05
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.50
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.15	2.64	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	287	287	0.01	0.01	1.21	291
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.85	2.85	< 0.005	< 0.005	0.01	2.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.47	0.47	< 0.005	< 0.005	< 0.005	0.48
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Architectural Coating (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	0.96	1.17	< 0.005	0.04	—	0.04	0.04	—	0.04	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	72.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.83	1.83	< 0.005	< 0.005	—	1.84
Architectural Coatings	—	0.99	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Architectural Coatings	—	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.33	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	35.8	35.8	< 0.005	< 0.005	0.15	36.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.45
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Architectural Coating (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.19	0.16	0.96	1.17	< 0.005	0.04	—	0.04	0.04	—	0.04	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	72.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.83	1.83	< 0.005	< 0.005	—	1.84
Architectural Coatings	—	0.99	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Architectural Coatings	—	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.33	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	35.8	35.8	< 0.005	< 0.005	0.15	36.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.45
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	1.05	1.02	0.37	3.55	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	492	492	0.03	0.03	2.03	504
Total	1.05	1.02	0.37	3.55	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	492	492	0.03	0.03	2.03	504
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	0.82	0.79	0.40	2.71	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	434	434	0.04	0.03	0.05	444
Total	0.82	0.79	0.40	2.71	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	434	434	0.04	0.03	0.05	444
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.11	0.11	0.05	0.38	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	54.1	54.1	< 0.005	< 0.005	0.10	55.3
Total	0.11	0.11	0.05	0.38	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	54.1	54.1	< 0.005	< 0.005	0.10	55.3

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	1.05	1.02	0.37	3.55	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	492	492	0.03	0.03	2.03	504
Total	1.05	1.02	0.37	3.55	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	492	492	0.03	0.03	2.03	504
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.82	0.79	0.40	2.71	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	434	434	0.04	0.03	0.05	444
Total	0.82	0.79	0.40	2.71	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	434	434	0.04	0.03	0.05	444
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.11	0.11	0.05	0.38	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	54.1	54.1	< 0.005	< 0.005	0.10	55.3
Total	0.11	0.11	0.05	0.38	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	54.1	54.1	< 0.005	< 0.005	0.10	55.3

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	988	988	0.07	0.01	—	992
Total	—	—	—	—	—	—	—	—	—	—	—	—	988	988	0.07	0.01	—	992
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	988	988	0.07	0.01	—	992
Total	—	—	—	—	—	—	—	—	—	—	—	—	988	988	0.07	0.01	—	992
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	164	164	0.01	< 0.005	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	—	164	164	0.01	< 0.005	—	164

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	988	988	0.07	0.01	—	992
Total	—	—	—	—	—	—	—	—	—	—	—	—	988	988	0.07	0.01	—	992
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	988	988	0.07	0.01	—	992
Total	—	—	—	—	—	—	—	—	—	—	—	—	988	988	0.07	0.01	—	992
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	164	164	0.01	< 0.005	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	—	164	164	0.01	< 0.005	—	164

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Total	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Total	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.01	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.2	59.2	0.01	< 0.005	—	59.3
Total	0.01	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.2	59.2	0.01	< 0.005	—	59.3

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Total	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Total	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.01	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.2	59.2	0.01	< 0.005	—	59.3
Total	0.01	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.2	59.2	0.01	< 0.005	—	59.3

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	72.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.20	0.19	0.01	1.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.65	4.65	< 0.005	< 0.005	—	4.67
Total	0.20	73.2	0.01	1.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.65	4.65	< 0.005	< 0.005	—	4.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Total	0.02	0.32	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	72.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.20	0.19	0.01	1.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.65	4.65	< 0.005	< 0.005	—	4.67
Total	0.20	73.2	0.01	1.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.65	4.65	< 0.005	< 0.005	—	4.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Total	0.02	0.32	< 0.005	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Total	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2

Total	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.91	5.90	7.81	0.20	< 0.005	—	14.1
Total	—	—	—	—	—	—	—	—	—	—	—	1.91	5.90	7.81	0.20	< 0.005	—	14.1

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Total	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Total	—	—	—	—	—	—	—	—	—	—	—	11.5	35.6	47.2	1.18	0.03	—	85.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.91	5.90	7.81	0.20	< 0.005	—	14.1
Total	—	—	—	—	—	—	—	—	—	—	—	1.91	5.90	7.81	0.20	< 0.005	—	14.1

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Total	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Total	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.88	0.00	2.88	0.29	0.00	—	10.1
Total	—	—	—	—	—	—	—	—	—	—	—	2.88	0.00	2.88	0.29	0.00	—	10.1

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Total	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Total	—	—	—	—	—	—	—	—	—	—	—	17.4	0.00	17.4	1.74	0.00	—	60.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.88	0.00	2.88	0.29	0.00	—	10.1
Total	—	—	—	—	—	—	—	—	—	—	—	2.88	0.00	2.88	0.29	0.00	—	10.1

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	1.12
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	1.12

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.77	6.77
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	1.12
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	1.12

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Building Construction	Building Construction	8/1/2022	8/28/2022	5.00	20.0	—
Paving	Paving	8/29/2022	9/1/2022	5.00	4.00	—
Architectural Coating	Architectural Coating	9/2/2022	9/8/2022	5.00	5.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56

Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Building Construction	—	—	—	—
Building Construction	Worker	10.9	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	4.26	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.18	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Building Construction	—	—	—	—
Building Construction	Worker	10.9	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	4.26	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	2.18	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	39,000	13,000	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2022	0.00	457	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	129	0.00	0.00	33,622	492	0.00	0.00	128,334

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	129	0.00	0.00	33,622	492	0.00	0.00	128,334

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	39,000	13,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

General Light Industry	789,735	457	0.0330	0.0040	1,115,039

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	789,735	457	0.0330	0.0040	1,115,039

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	6,012,500	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	6,012,500	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	32.2	0.00

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	32.2	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	28.2	annual days of extreme heat
Extreme Precipitation	0.10	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score

Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack	N/A	N/A	N/A	N/A
Air Quality	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	65.7
AQ-PM	48.7
AQ-DPM	30.1
Drinking Water	57.2
Lead Risk Housing	30.7
Pesticides	89.5
Toxic Releases	46.0
Traffic	8.75
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	74.8
Haz Waste Facilities/Generators	86.6
Impaired Water Bodies	99.5
Solid Waste	95.0
Sensitive Population	—
Asthma	68.5
Cardio-vascular	89.4
Low Birth Weights	20.3
Socioeconomic Factor Indicators	—

Education	73.4
Housing	39.7
Linguistic	85.2
Poverty	72.1
Unemployment	65.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	24.4193507
Employed	22.93083537
Education	—
Bachelor's or higher	23.23880405
High school enrollment	14.0639035
Preschool enrollment	58.10342615
Transportation	—
Auto Access	48.80020531
Active commuting	25.67688952
Social	—
2-parent households	77.12049275
Voting	20.99319902
Neighborhood	—
Alcohol availability	67.0986783
Park access	38.22661363
Retail density	7.955857821
Supermarket access	24.95829591

Tree canopy	1.424355191
Housing	—
Homeownership	51.98254844
Housing habitability	38.4832542
Low-inc homeowner severe housing cost burden	37.62350828
Low-inc renter severe housing cost burden	23.55960477
Uncrowded housing	28.33311947
Health Outcomes	—
Insured adults	30.39907609
Arthritis	0.0
Asthma ER Admissions	42.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	90.7
Cognitively Disabled	19.2
Physically Disabled	15.4
Heart Attack ER Admissions	7.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	39.5
Physical Health Not Good	0.0
Stroke	0.0

Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	33.8
Elderly	39.7
English Speaking	4.1
Foreign-born	93.6
Outdoor Workers	18.3
Climate Change Adaptive Capacity	—
Impervious Surface Cover	72.6
Traffic Density	16.8
Traffic Access	23.0
Other Indices	—
Hardship	80.6
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	84.0
Healthy Places Index Score for Project Location (b)	26.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes

Project Located in a Community Air Protection Program Community (Assembly Bill 617)	El Centro Corridor

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health and Equity Evaluation Scorecard not completed.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	There will be no demolition or grading for the project
Operations: Vehicle Data	Only work monday-friday

Appendix 4

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: Air Basin
Region: Salton Sea
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	ROG_RUNEX
Salton Sea	2022	T6 Public	Aggregated	5	DSL	3.142113579	1.18E-06
Salton Sea	2022	T6 Public	Aggregated	10	DSL	5.228274605	1.56E-06
Salton Sea	2022	T6 Public	Aggregated	15	DSL	13.10999035	2.32E-06
Salton Sea	2022	T6 Public	Aggregated	20	DSL	20.73248213	2.32E-06
Salton Sea	2022	T6 Public	Aggregated	25	DSL	105.9081999	8.49E-06
Salton Sea	2022	T6 Public	Aggregated	30	DSL	320.6990708	1.94E-05
Salton Sea	2022	T6 Public	Aggregated	35	DSL	366.2872134	1.70E-05
Salton Sea	2022	T6 Public	Aggregated	40	DSL	640.6949706	2.25E-05
Salton Sea	2022	T6 Public	Aggregated	45	DSL	698.9256645	1.96E-05
Salton Sea	2022	T6 Public	Aggregated	50	DSL	925.4620217	2.12E-05
Salton Sea	2022	T6 Public	Aggregated	55	DSL	1994.642552	3.87E-05
Salton Sea	2022	T6 Public	Aggregated	60	DSL	1169.040662	2.39E-05
Salton Sea	2022	T6 Public	Aggregated	65	DSL	3741.782408	6.74E-05
Salton Sea	2022	T6 Public	Aggregated	70	DSL	888.9820297	1.94E-05
Salton Sea	2022	T6 Public	Aggregated	75	DSL	0	0
Salton Sea	2022	T6 Public	Aggregated	80	DSL	0	0
Salton Sea	2022	T6 Public	Aggregated	85	DSL	0	0
Salton Sea	2022	T6 Public	Aggregated	90	DSL	0	0
Salton Sea	2022	T7 Public	Aggregated	5	DSL	3.243784356	2.31E-06
Salton Sea	2022	T7 Public	Aggregated	10	DSL	6.14131672	3.33E-06
Salton Sea	2022	T7 Public	Aggregated	15	DSL	11.58745319	4.20E-06
Salton Sea	2022	T7 Public	Aggregated	20	DSL	20.38838774	4.27E-06
Salton Sea	2022	T7 Public	Aggregated	25	DSL	104.5658486	1.67E-05
Salton Sea	2022	T7 Public	Aggregated	30	DSL	301.7394139	3.88E-05
Salton Sea	2022	T7 Public	Aggregated	35	DSL	347.1042163	3.50E-05
Salton Sea	2022	T7 Public	Aggregated	40	DSL	537.2761609	4.62E-05
Salton Sea	2022	T7 Public	Aggregated	45	DSL	635.3461856	4.45E-05
Salton Sea	2022	T7 Public	Aggregated	50	DSL	827.9826725	5.12E-05
Salton Sea	2022	T7 Public	Aggregated	55	DSL	1657.722719	9.87E-05
Salton Sea	2022	T7 Public	Aggregated	60	DSL	1224.505563	5.89E-05
Salton Sea	2022	T7 Public	Aggregated	65	DSL	3657.673111	0.000223985
Salton Sea	2022	T7 Public	Aggregated	70	DSL	1444.331922	5.93E-05
Salton Sea	2022	T7 Public	Aggregated	75	DSL	0	0
Salton Sea	2022	T7 Public	Aggregated	80	DSL	0	0
Salton Sea	2022	T7 Public	Aggregated	85	DSL	0	0
Salton Sea	2022	T7 Public	Aggregated	90	DSL	0	0

TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
1.34E-06	3.31E-06	3.77E-05	0.007778376	1.60E-07	1.53E-07
1.77E-06	4.50E-06	5.13E-05	0.011563693	2.30E-07	2.20E-07
2.64E-06	7.91E-06	8.32E-05	0.024100543	3.83E-07	3.66E-07
2.64E-06	9.07E-06	9.67E-05	0.032870286	4.64E-07	4.44E-07
9.66E-06	3.47E-05	0.000383612	0.153475916	1.88E-06	1.80E-06
2.21E-05	7.99E-05	0.000995984	0.438229825	4.93E-06	4.72E-06
1.94E-05	7.00E-05	0.001034881	0.476593902	5.14E-06	4.92E-06
2.56E-05	9.37E-05	0.001584384	0.799116144	8.01E-06	7.67E-06
2.24E-05	8.07E-05	0.001696913	0.841712239	8.87E-06	8.49E-06
2.41E-05	8.54E-05	0.002159783	1.081684791	1.20E-05	1.15E-05
4.40E-05	0.000150401	0.004460365	2.273600387	2.69E-05	2.57E-05
2.72E-05	8.75E-05	0.003070679	1.321374263	1.92E-05	1.83E-05
7.67E-05	0.000256033	0.008083895	4.217951164	5.11E-05	4.89E-05
2.21E-05	6.97E-05	0.002577105	1.006349006	1.59E-05	1.53E-05
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
2.63E-06	7.19E-06	7.26E-05	0.011465648	3.49E-07	3.34E-07
3.79E-06	1.12E-05	0.000108066	0.019277439	5.24E-07	5.01E-07
4.78E-06	1.54E-05	0.000153948	0.030938759	8.56E-07	8.19E-07
4.86E-06	1.98E-05	0.000191207	0.046047018	1.01E-06	9.65E-07
1.90E-05	7.93E-05	0.000928093	0.218086432	4.92E-06	4.71E-06
4.41E-05	0.000182466	0.002630945	0.597409996	1.35E-05	1.30E-05
3.99E-05	0.000166254	0.002861101	0.652984518	1.41E-05	1.35E-05
5.26E-05	0.000215497	0.004756245	0.979730114	2.28E-05	2.18E-05
5.06E-05	0.000205785	0.005327582	1.11400427	2.52E-05	2.41E-05
5.83E-05	0.000228029	0.007041599	1.415501576	3.39E-05	3.24E-05
0.000112404	0.000410247	0.014835482	2.793788863	7.48E-05	7.16E-05
6.71E-05	0.000245191	0.008514101	1.99141133	4.46E-05	4.27E-05
0.00025499	0.000885334	0.034411853	6.153464692	0.000178858	0.000171121
6.75E-05	0.000256545	0.008164247	2.305131175	4.29E-05	4.11E-05
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

Emission Factors	Per Year
Grain processes[2]	**Amount of grains (tons)[4]**
Receiving	8840
Shipping	8840
Headhouse and internal handling	3120
Internal vibrating cleaners	3120
Grain milling - Hammermill	3120
Control factor for entire process[1]	90% reduction of entire controlled
Total Emissions	

List of components for Decorticator Equipment[4]
Bale infeed
Fibertrack 660
Hurd Collection Conveyor
Fiber Cleaner
2500CFM Vacuum
Hurd Cleaner
GCS 1000 Screen Cleaner
Dual Stage Hammer Mill

References

[1] EPA document 9101DT33: particulate control for fugitive dust.

[2] AP-42 Grain processing emission factors

[3] Background documentation - controlled factors

[4] EXHIBIT B - Proposed Use - Project Discription

Per Day	Uncotrolled	Controlled
Amount of grains (tons)[4]	emission factor (lbs/ton)[2]	controlled emission factors (lbs/ton)[3]
34	0.059	0.03
34	0.029	0.015
12	0.034	0.0047
12	0.019	0.0093
12	0.0335	0.012
emissions		

Estimated daily traffic[4]	1-2 trucks/day

	Estimated to receive and ship:[4]
Single axle truck	20,000 lbs
Tandem axle truck	34,000 lbs

Capacity and Speed:[4]	2,000 - 3,000 lbs/hour

Uncontrolled /year	**Controlled /year**
Uncontrolled PM-10 Emissions (tons)	**Controlled PM-10 Emissions (tons)**
0.26078	0.1326
0.12818	0.0663
0.05304	0.007332
0.02964	0.014508
0.05226	0.01872
	0.215514
0.5239	**0.23946**
tons/year	**tons/year**

Uncontrolled /day	Controlled /day
Uncontrolled PM-10 Emissions (lbs)	**Controlled PM-10 Emissions (lbs)**
2.006	1.02
0.986	0.51
0.408	0.0564
0.228	0.1116
0.402	0.144
	1.6578
4.03	**0.1842**
lbs/day	lbs/day

*The factor quality rating for all emission factc

*Maximum receiving, shipping, and processing

*Factor quality rating: E[3]
E - Poor: The emission factor was developed fr to suspect that the facilities tested do not repr may be evidence of variability within the source categ

*assuming straight truck
*assuming straight truck

*assuming baghouse

ırs are rated E.

ȝ using project description quantitative factors.

ˑom C- and D-rated test data, and there is reason
ˑesent a random sample of the industry. There also

ory population. Limitations on the use of these factors

Control Factors[3]
Processing Operation
Receiving
Belt conveyor
Distributors
Cleaners
Hammermills
Truck loadout

Capture collection systen

Receiving pit capture/col

Control mechanisms
Capture/collection, Total/Partial enclosure, grain flow control
Enclosure, Flow control, Capture/collection, Oil suppression, Total/partial enclosure
Capture/collection, Total/Partial enclosure
Enclosure/exhuast
Capture/collection, Total/partial enclosure
Dust suppression, capture/collection, oil suppression, total/partial enclosure

ns refers to a forced ventilation system consisting of a capture device (hood or enclosure) connected via dust

lection (ventilation) system: Indicates the a PM reduction of approximately 60-80% may be acheivable.

work to a dust collector.

Appendix 5

CHANGE OF ZONE

ASSESSOR'S PARCEL NO.
058-010-052-000
551 Pruett Road, Calexico, CA 92231

June, 2022

Prepared for:

Salton Group LLC
2711 N. Sepulveda Blvd Ste 233
Manhattan Beach CA 90266

Prepared by:

Barrett Biological Enterprises, Inc.

Certified as performed in accordance with established biological practices by:

Marie S. Barrett

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FIGURES

Figure 1 *Regional Location Map*

Figure 2 *Project Location Maps/ Biological Resources Map*

EXECUTIVE SUMMARY

General biological survey was conducted on May 9, 2022, within the proposed site. The 44.81 gross acres of the project site is located within Riverside County, CA.

No federal or state botanical or zoological endangered or threatened species were found within the project site areas or buffer survey zone during this survey.

Burrowing owls, a California Species of Special Concern, were not found on project but could be found in adjacent agricultural areas. Migratory Bird Treaty Act bird nest was found on site.

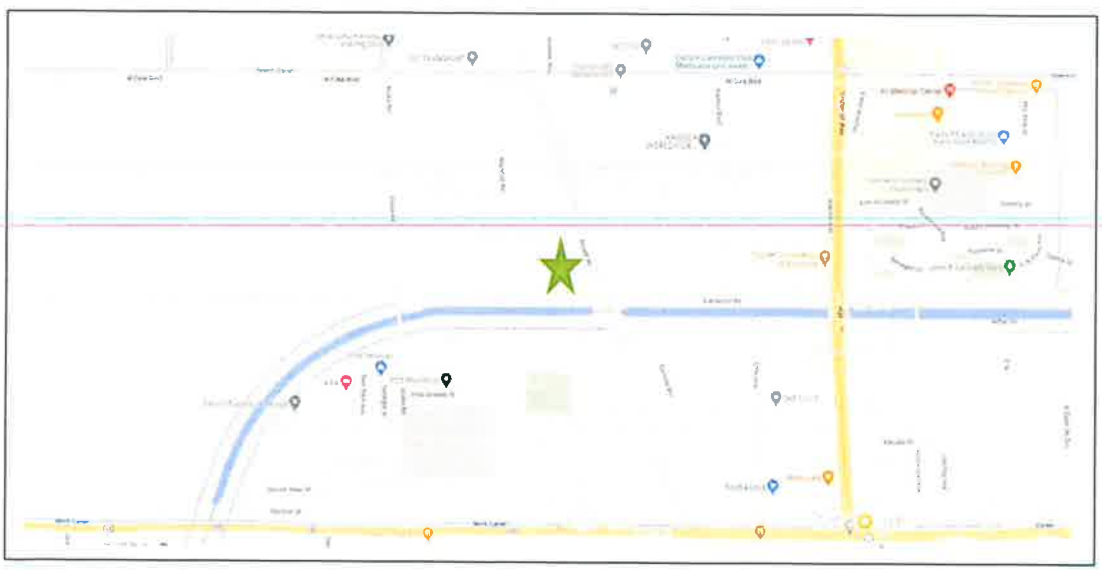
Invasive species were found on site.

1.0 INTRODUCTION

1.1 LOCATION

The site consists of 44.81acres that is currently a vacant lot with A-2-U zoning. It is located in the Calexico area, north of SR 98 and west of SR 111. The address is 551 Pruett Road Calexico, California. West Cole Road in the northern boundary and Pruett Road is the eastern boundary.

Figure 1 Regional Location Map



1.2 PROJECT DESCRIPTION

This biological survey was done to inventory existing environmental status on the project site. This information will guide plans related to the preparation of a Zone change from A-2-U to M-1. APN Number #058-010-052-000.

The site currently has a General Plan designation of A-2-U (General Agricultural Area - Urban Areas (upon permit/development applicable Urban area regulations will be followed); this action is directed to changing designation to M-1 (Light Industrial Area).

Possible Applicable Environmental Regulations

1.2.1 STATE OF CALIFORNIA

California Environmental Quality Act (CEQA) Title 14 CA Code of Regulations 15380 requires that endangered, rare or threatened species or subspecies of animals or plants be identified within the influence of the project. If any such species are found, appropriate measures should be identified to avoid, minimize, or mitigate to the extent possible the effects of the project.

Native Plant Protection Act CDFG Code Section 1900-1913 prohibits the taking, possessing, or sale within the stare of any plant listed by CDFG as rare, threatened, or endangered. Landowners may be allowed to take these species if CDFG is notified at least 10 days prior to plant removal or if these plants are found within public right of ways.

CA Fish and Game Codes 3503, 3503.5. 3513 protect migratory birds, bird nests and eggs including raptors (birds of prey) and raptor nests from take unless authorized by CDFW.

CA Fish and Game Code Section **1600, as amended** regulates activities that substantially diverts or obstructs the natural flow of any river, stream or lake or uses materials from a streambed. This can include riparian habitat associated with watercourses.

State of CA Fully Protected Species identifies and provides additional protection to species that are rare or face possible extinction. These species may not be taken or possessed at any time except for scientific research or relocation for protection of livestock.

California Endangered Species Act (CESA) protects all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved.

Porter-Cologne Water Quality Control Act, as amended is administered by the State Water Resource Control Board (SWRCB) to protect water quality and is an avenue to implement CA responsibilities under the federal Clean Water Act. This act regulates discharge of waste into a water resource.

1.2.2 FEDERAL

National Environmental Policy Act (NEPA: 42 United States Code (U.S.C.) 4321 et seq) established national environmental policy and goals for the protection, maintenance, and enhancement of the environment. A process is available for implementation goals within federal agencies. NEPA requires federal agencies to consider the environment in processing proposed actions.

Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544) protects federal listed threatened and endangered species from unlawful take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or significantly modify habitat. If a proposed project would jeopardize a threatened or endangered species, then a Section 7 consultation with a federal agency could be required.

Migratory Bird Treaty Act (50 Code Federal Regulations (CFR) 10.13) is a federal statute with several foreign countries to protect species that migrate between countries. Over 850 species are listed and may not be disrupted during nesting activities. It is illegal to collect any part (nest, feather, eggs, etc.) of a listed species, disturb species while nesting or offer for trade or barter any listed species or parts thereof.

Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) protects bald and golden eagles from take (harass, harm, pursue, hunt, shoot, kill, wound, collect, capture, trap or attempt to do so) or interference with breeding, feeding or sheltering activities.

Clean Water Act, 1972 (CWA 33 U.S.C. 1251 et seq.) regulates discharges into waters of the U.S. EPA is given the responsibility to implement programs to prevent pollution.

2.0 BIOLOGICAL SURVEY METHODOLOGIES

The purpose of the survey was to determine the inventory of biological resources at the time of the survey; the possibility of the existence of endangered, threatened, sensitive or species of concern within project area: map habitats, and ascertain the probability of the presence of sensitive species on site.

2.1 FIELD SURVEYS

2.1.1 GENERAL BIOLOGICAL SURVEY

The survey was intended to assess presence or the potential for species to occur based on habitat suitability.

California Natural Diversity Database (CNDDB), California Native Plant Society database (CNPS), United States Fish and Wildlife Service (USFWS)/Carlsbad office Sensitive Species list, field guides, personal contacts and other methods were utilized to ascertain potential for sensitive species on the site.

Pedestrian biological survey of the approximately 44.81 (gross)-acre project area and buffer zones, where possible, to document vegetation and animals were conducted by biologists, Glenna Barrett and Michel Remington, as indicated in Table 1: Field Survey Schedule. The surveys were conducted to develop an inventory of species (plant and animal) present at the time of the surveys, map vegetative communities, if present and ascertain the potential for occurrence of sensitive, endangered, or threatened species within the project area and vicinity.

TABLE 1: FIELD SURVEY SCHEDULE

Date/Conditions	Surveyors	Survey Time
5/9/22 - 62-68ºF 0% cloud cover, 0-4 mph	Glenna Barrett/Michel Remington	0645-0800
Total all surveyors		2.5 hrs.

Garmin GPS, binoculars, thermometer, anemometer and digital cameras were used.

2.1.2 JURISDICTIONAL DELINEATION

Blue line washes were not observed on site. The FEMA Flood Map (06025C2075C) indicated the area is within Zone X: areas determined to be outside the 0.2% annual chance floodplain.

Literature Review

Potential occurrence for endangered, threatened, sensitive, species of concern and noxious weeds was determined by perusal of appropriate data bases which included:

- CA Natural Diversity Database (CNDDB)
- CA Native Plant Society (CNPS) Rare Plant Program
- USFWS Bird Species of Conservation Concern
- UFWS Critical Habitat for Threatened & Endangered Species Website
- CA Food and Agriculture Department Noxious Weed Information Project

3.0 EXISTING CONDITIONS

3.1 TOPOGRAPHY AND SOILS

Calexico is located in Imperial County and is found in the southern part of the county. The USDA soil map indicates the following:

Imperial County, California, Imperial Valley Area (CA683)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
115	Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes	42.5	100.0%
Totals for Area of Interest		**42.5**	**100.0%**

Definition of 115—Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes

Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Imperial, wet, and similar soils: 41 percent Glenbar, wet, and similar soils: 40 percent Minor components: 19 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Imperial, Wet Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed

Typical profile

H1 - 0 to 12 inches: silty clay loam

H2 - 12 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 20.0

Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Capability classification (irrigated): 3w Land capability classification (nonirrigated): 7w Hydrologic Soil Group: C

Ecological site: R031XY007CA - Lacustrine Basin and Large River Floodplain

Hydric soil rating: No

Description of Glenbar, Wet Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed

Typical profile

H1 - 0 to 13 inches: silty clay loam

H2 - 13 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Very slightly saline to moderately saline (2.0 to

8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 15.0

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w Land capability classification (nonirrigated): 7w Hydrologic Soil Group: C

Ecological site: R031XY007CA - Lacustrine Basin and Large River Floodplain

Hydric soil rating: No

The soil on site is not prone to flooding and is slightly to moderately saline.

3.2 VEGETATION

3.2.1 VEGETATION COMMUNITY

Vegetation has been divided into communities that are groups of plants that usually coexist within the same area. This area is considered the Colorado Desert and native vegetation would be creosote bush scrub (*Larrea tridentate* Shrubland Alliance). (*A Manual of California Vegetation*, 2009, Sawyer/Wolf).

Table 2: Vegetative Communities

APN	Acreage	Description	Vegetative Community
058-010-052-000	44.81	Fenced vacant lot	Ruderal

3.2.2 AGRICULTURE

Site did not show signs of recent agricultural cultivation.

3.2.3 VEGETATION

Sparse vegetation found on site was ruderal (listed with scientific names in Appendix C). No annuals were found on site; sparse vegetation which included typical ruderal species (listed in Appendix C). The area had been cleared for fire control recently.

3.3 WILDLIFE

3.3.1 INVERTEBRATES

Ants and grasshoppers were observed; identified in Appendix C.

3.3.2 AMPHIBIANS

Reliable moisture is a requirement for a portion of amphibian life cycle. No amphibians were observed on site. Due to the lack of available water, none would be expected.

3.3.3 REPTILES

Reptiles utilize habitat dependent upon their dietary requirements. Some species diet includes vegetation while others consume insects. All require vegetation for shelter. Sparse vegetation is available on site. No species of lizard that were found but typical local species such as fence lizards (*Sceloporus occidentalis*) could be expected.

3.3.4 BIRDS

Bird species diversity varies with seasons, variety and quality of vegetative communities.

Birds and one bird nest were observed in the vicinity. List of species observed is found in Appendix C. No endangered, threatened or species of concern were observed.

3.3.5 MAMMALS

Minimal signs of mammals were observed on site but were assumed to be coyotes and rabbits. Bats are not expected; roosting sites are not available.

3.3.6 FISH

The project site has sparse vegetation. There are no permanent water sources observed on site; no fish would be expected.

3.4 SENSITIVE BIOLOGICAL RESOURCES

3.4.1 SPECIAL STATUS SPECIES

TABLE 3. SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR ON PROJECT SITE

Special-Status Species	Legal Status	Found	Potential for Occurrence
Burrowing owl *Athene cunicularia*	Federal: None State: CSC	No	Low on site; favorable foraging habitat found within 0.25 miles. None observed. Highly disturbed acreage with marginal available burrow opportunities within concrete piles found on site; limited prey observed.
Gila Woodpecker *Melanerpes uropygialis*	CDFW: Endangere d	No	Very low on site --None observed Highly disturbed acreage with sparse available nesting opportunities; no palm trees.
Le Conte's thrasher *Toxostoma lecontei*	CDFW: Species of Concern	No	Very low on site - -None observed Highly disturbed acreage with sparse available nesting opportunities
Loggerhead shrike *Lanius ludovicianus*	CDFW: Species of Concern	No	Very low on site - -None observed Highly disturbed acreage with sparse available nesting opportunities. No lizards, which are prey, were seen

3.4.2 RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES

Based upon the level of disturbance or habitat conversion within adjacent areas, vegetative communities are considered rare or sensitive. Rare vegetation types that are converted and degraded can disrupt the integrity of the ecological functions of natural environments. This can lead to the loss of sensitive plant species and a resulting decrease in biodiversity. Wetland or riparian habitat communities are considered sensitive by CDFW.

3.4.3 Jurisdictional Waters

Wetlands and other "waters of the United States" that are subject to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act are under the jurisdiction of the U.S. Army Corp of Engineers (ACOE).

3.4.4 Habitat Connectivity and Wildlife Corridors

The ability for wildlife to freely move about an area and not become isolated is considered connectivity and is important to allow dispersal of a species to maintain exchange genetic characteristics; forage (food and water) and escape from predation.

3.4.5 California Desert Conservation Area (CDCA)

This project is not within or immediately adjacent to a CDCA.

4.0 PROPOSED PROJECT IMPACT

The proposed impacts are summarized in this section.

4.1 IMPACT TO SPECIAL STATUS SPECIES

If this project has a substantial adverse effect, either directly or through habitat modification or elimination, on any plant or animal species that is considered endangered, threatened, candidate for listing or special status species either through federal or state regulations, this project would be considered to have a significant impact.

4.1.1 BIOLOGICAL RESOURCES

No special status/priority plants or animals were observed. The approximately 44.81 acres are highly disturbed, and no adverse impact is expected either directly or through habitat modification on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service when avoidance, minimization and mitigation recommendations are followed. Biological resources found are listed in Figure 2 Biological Resources Map and Table 4. Figure 2 is found in Appendix.

TABLE 4 BIOLOGICAL RESOURCES

Location	Description	Recommendations
1. 32°41'27.51/115°30'37.17	Nest in weedy fence; inactive	Nesting bird survey prior to start of construction

4.1.2 SENSITIVE WILDLIFE

4.1.2.1 BURROWING OWL

Construction Impact.

If construction is planned to begin during nesting season (generally February 1 through August 31), the project area and a 500-foot buffer area should be surveyed to determine presence/absence of occupied or active nesting of burrowing owl. if burrows are found, an appropriate buffer zone for the species should be maintained during construction until juveniles have fledged. A determination of a requirement for artificial burrows if occupied/active burrows are removed should be made.

There will be no impacts to nesting raptors due to the absence of suitable large trees for nesting.

Section 5 discusses avoidance, minimization and mitigation requirements for burrowing owls found on site or in vicinity during construction.

4.1.2.2 MBTA NESTING

Construction Impact

There are no small trees on site that could encourage bird nesting. Nests were observed along a fence line on site. Ground nesting species, such as lesser nighthawk, could use the area.

If construction is planned to begin during nesting season (generally February 1 through August 31), the project area and a 500-foot buffer area should be surveyed to determine presence/absence of nesting. if active nests are found, an appropriate buffer zone for the species should be maintained during construction until juveniles have fledged.

There will be no impacts to nesting raptors due to the absence of suitable large trees for nesting.

Operations and Maintenance Indirect Impact

ELECTROCUTION

Typical community electrical components currently exist and could be expanded within the project but would not be expected to impact avian populations.

4.2 IMPACT TO RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES

The distribution of riparian plant species is largely driven by hydrological and soil variables and riparian plant communities frequently occur in relatively distinct zone along streamside elevational and soil textural gradients.

There is no riparian vegetation found on site, therefore this project should not have a substantial adverse effect on any riparian habitat.

4.3 IMPACT TO JURISDICTIONAL WATERS

There are no wetlands found on site; therefore, this project will have no impact on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

The FEMA Flood Map (06025C2075C) indicated the area is within Zone X: areas determined to be outside the 0.2% annual chance floodplain

4.4 IMPACT TO WILDLIFE MOVEMENT AND NURSERY SITES

This project is in a predominately developed community. Site is bordered by SR 98 on the south; a trucking warehouse on the north; on by east by Pruitt Road; vacant lot on the west. As a result of these existing barriers, the project will not interfere substantially with the currently restricted movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. The area is surrounded by commercial, industrial and residential areas. There are agricultural fields a quarter mile to the west.

4.5 IMPACT TO AIRPORTS

This project has no known components that will attract avian populations that would impact airports. It is approximately 1.4 miles from Calexico International Airport, CA, which is the closest airport. No impact upon airports is expected dependent upon project design which is unknown at this time.

4.6 CEQA IMPACTS

Possible CEQA significant impacts that could include the following within the parameters of this project:

TABLE 5: EXPECTED IMPACTS

Area	Endangered/threatened/ Species of Concern Habitat	Riparian Habitat	Wetlands	Wildlife Corridors	Local Ordinances	Waters of the U.S.
44.81 acres	None with avoidance/ minimization/mitigation measures listed	No	No	No	No	No connectivity

5.0 RECOMMENDED AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES

5.1 SENSITIVE WILDLIFE

5.1.1 BURROWING OWL

Avoidance Measures

A preconstruction survey should be performed 14 days and 24 hours prior to initiating ground disturbance. Report should be submitted to the appropriate agency.

Since burrowing owls are known to be present throughout Imperial County, it is recommended that construction foremen and workers and onsite employees be given worker training by a qualified biologist regarding Burrowing Owl that would include the following:

- Description
- Biology
- Regulations (CDFW/USFWS)
- Wallet card with picture/guidelines for protecting owl and wildlife
- Notification procedures if Burrowing Owl (dead, alive, injured) is found on or near site

A sign in should be obtained and the training materials and sign in sheet should be submitted to appropriate agency.

Minimization Measures

To avoid direct or indirect impacts to Burrowing Owl, preconstruction protocol survey for this species should be conducted to determine if this species is present within the survey area. If it is present, mitigation will be required.

This project site is historically highly disturbed and will not remove favorable habitat.

5.1.2 MIGRATORY BIRDS AND NON-MIGRATORY BIRD SPECIES

If construction is scheduled to begin during nesting season (February-August), a survey for nesting birds should be performed within 3-7 days of groundbreaking activities on project site. Dependent upon species found, appropriate buffer zones will be established by a qualified biologist. If construction is delayed or halted for over 2 weeks during nesting season, a nesting bird survey should be conducted with 3-7 days of resumption of construction.

It is recommended that construction foremen and workers and onsite employees be given worker training by a qualified biologist regarding nesting birds that would include the following:

- Description of birds covered under MBTA and likely to be found on project
- Biology
- Regulations (CDFW/USFWS)
- Notification procedures if bird (dead, alive, injured) is found on or near site

A sign in should be obtained and the training materials and sign in sheet should be submitted to appropriate agency.

5.1.3 INVASIVE PLANTS

Any saltcedar (*Tamarix sp*) found on site should be removed in a manner that will not distribute plant seeds or plant material as overseen by project biologist prior to construction. Use of covered trailers to remove invasive species to an approved landfill is recommended.

Equipment brought onsite should be clean to prevent importing invasive species to site.

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APPENDIX A
SENSITIVE BOTANICAL AND ZOOLOGICAL SPECIES (CNDDB/CNPS) SPECIES

APPENDIX A
SENSITIVE BOTANICAL AND ZOOLOGICAL SPECIES (CNDDB/CNPS)
Calexico Quadrangle Search May 2022

VASCULAR SPECIES	STATUS[1]	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
Abrams' spurge *Euphorbia abramsiana*	CA_Rare_Plant _Rank 2B.2	Habit: Annual. Stem: prostrate, repeatedly forking, 2-faced, subglabrous to hairy. Leaf: opposite throughout, 2-ranked, subsessile; stipules free, 2--5-parted; blade 2--12 mm, ovate to elliptic-oblong, entire to finely toothed, glabrous to hairy,	Distribution Outside California: to Arizona, Mexico.	L None found; no habitat
gravel milk-vetch *Astragalus sabulonum*	CA_Rare_Plant _Rank 2B.2	Habit: Annual, low, small or coarse, leafy; hairs +- dense, ascending or spreading, +- wavy. Stem: erect or decumbent, 2--26 cm. Leaf: 1.5--6.5 cm; leaflets 5--15, 2--13 mm, oblanceolate, tips blunt, +- notched.	**California:** to Utah, New Mexico, northern Mexico.	L None found; no habitat
chaparral sand-verbena *Abronia villosa var. aurita*	CA_Rare_Plant _Rank 1B.1	**Flower:** perianth tube 2--3.5 cm, limb (1)1.5--1.8 cm wide. **Fruit:** body nearly smooth; wings exceeding body.	**Ecology:** Sandy places in coastal-sage scrub, chaparral; **Elevation:** < 1600 m.	L None found; no habitat
BIRD SPECIES	**STATUS[1]**	**DESCRIPTION OF SPECIES**	**HABITAT**	**OBSERVATION/ SITE POTENTIAL**
burrowing owl *Athene cunicularia*	CDFW_Status SSC	Adults are brown birds mottled with sandy-pale spots on the upperparts. The breast is spotted, grading to dark brown bars on the belly. They have a bold white throat and eyebrows, and yellow eyes.	Burrowing Owls live in open habitats with sparse vegetation such as prairie, pastures, desert or shrubsteppe, and airports. In parts of their range, they are closely associated with prairie dogs and ground squirrels, whose burrows they use for nests.	M None found but habitat in area

yellow warbler *Setophaga petechia*	CDFW_Status SSC	Other than in male breeding plumage and body size, all warbler subspecies are very similar. Winter, female and immature birds all have similarly greenish yellow upper sides and are a duller yellow below. Young males soon acquire breast and, where appropriate, head coloration.	Yellow warblers are the most widespread species in the diverse genus *Setophaga*, breeding in almost the whole of North America, the Caribbean, and down to northern South America.	L None found; no habitat
mountain plover *Charadrius montanus*	CDFW_Status SSC	The mountain plover is 8 to 9.5 inches (20 to 24 cm) long and weighs about 3.7 ounces (105 grams). Its wingspread is 17.5 to 19.5 inches (44.5 to 49.5 cm). The mountain plover's call consists of a low, variable whistle. Both sexes are of the same size.	It is misnamed, as it lives on level land. Unlike most plovers, it is usually not found near bodies of water or even on wet soil; it prefers dry habitat with short grass (usually due to grazing) and bare ground.	L None found; no habitat (No alfalfa or grass fields on site)

REPTILE SPECIES	STATUS[1]	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
flat-tailed horned lizard *Phrynosoma mcallii*	CDFW: Species of Concern	A medium-sized flat-bodied lizard with a wide oval-shaped body and scattered enlarged pointed scales on the upper body and tail. The back skin is smooth with small spines. 8 horns extend from the back of the head. The two central horns are long, slender, and sharp.	A species of reptile, it is endemic to the Sonoran desert of the southwestern United States and northwestern Mexico.	L None found; no habitat (sandy areas with creosote; ants not prevalent)
Colorado Desert fringe-toed lizard *Uma notata*	Species of concern	It can be distinguished from the Mojave fringe-toed lizard and the Coachella Valley fringe-toed lizard by its orange/pinkish stripes on the sides of its underside, while the backs have much similar appearances.	It is adapted to arid climates and is most commonly found in sand dunes within the Colorado Desert of the United States and Mexico.	L None found; no habitat; no sandy areas
western yellow bat *Lasiurus xanthinus*	CDFW_Status SSC	The western yellow bat is a small species, though it is larger than the southern yellow bat. Its fur is bright yellow. Individuals weigh approximately 16 g (0.56 oz). Its forearm length is 42–47 mm (1.7–1.9 in)	It is found in Mexico and the southwestern United States. This species roosts in trees	L None found; no roosting habitat
American Badger *Taxidea taxus*	CDFW: Species of Special Concern	Burrowing animals that feed on ground squirrels, rabbits, gophers and other small animals. Prefer grasslands, agricultural areas.	Badgers prefer to live in dry, open grasslands, fields, and pastures. They are found from high alpine meadows to sea level (or below in Death Valley, California).	L None found; no habitat

ZOOLOGICAL SPECIES	STATUS[1]	DESCRIPTION OF SPECIES	HABITAT	OBSERVATION/ SITE POTENTIAL
western mastiff bat *Eumops perotis californicus*	CDFW: Species of Special Concern	Easily identified by large ears united across the top of its skull and projecting about 10 mm beyond its snout. Characteristic to the family Molossidae, its wings are distinctively long but rather narrow. Their flight membranes are tough and leathery; is the largest molossid in North America..	**Found** where there are significant rock features offering suitable roosting habitat	L None found; no roosting habitat
pocketed free-tailed bat *Nyctinomops femorosaccus*	CDFW: SSC	Some defining characteristics include: Ears joined at the midline; second phalanx of the 4th digit is less than 5mm; anterior part of hard palate narrowly excised; upper incisors placed close together with longitudinal axes nearly parallel.	The pocketed free-tailed bat is found in Riverside, San Diego, and Imperial cos. This species is rare in California but is more common in Mexico. Habitats used include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	L None found; no roosting habitat
lowland leopard frog *Lithobates yavapaiensis*	CDFW_Status SSC	A medium-sized slender frog with a narrow head and long legs.	Its natural habitats are temperate forests, rivers, intermittent rivers, freshwater lakes, and freshwater marshes.	L None found; no water habitat

APPENDIX B
PHOTOGRAPHS

PHOTOGRAPHS

1. Facing south from southwest corner; dirt piles and ruderal vegetation

2. Facing south from southeast corner.

3. Concrete structure on east fenceline

4. Inside area of concrete structure; quailbush in foreground

5. Concrete piles provide burrowing owl burrowing habitat

6. Abandoned nest on east fenceline; railroad tracks in background

7. Large saltcedar (invasive species), no nests observed

8. Old scale house; concrete pad; railroad tracks in background

9. Facing west from northeast corner

10. Facing west from southwest corner.

11. Facing north from northeast corner

12. Facing north from west

APPENDIX C
SPECIES FOUND ONSITE AND VICINITY

ZOOLOGICAL SPECIES OBSERVED ON OR NEAR SITE		
Common name	***Scientific name***	
Birds		**Onsite/offsite**
Mourning dove	*Zenaida macroura*	onsite
Great tailed Grackle	*Quiscalus mexicanus*	onsite
Insects		
Ant hill	Unknown	Onsite
Grasshopper	*various*	Onsite
House fly	*Musca domestica*	Onsite
Mammals		**Onsite/offsite**
Canine tracks	*various*	Both

BOTANICAL SPECIES OBSERVED ON OR NEAR SITE		
Common name	**Scientific name**	**CNPS Classification**
		Cal Exotic Pest Plant
Quailbush	*Atriplex lentiformis*	no
Saltcedar		Yes Ca Noxious Weed Cal-IPC rating: High

APPENDIX D
QUALIFICATIONS

GLENNA MARIE BARRETT

PO Box 636 Imperial, California 92251 (760) 425-0688
glennabarrett@outlook.com

PROFILE

Organized and focused individual, adept at implementing multifaceted projects while working alone or as an integral part of a team .Skilled in client/employee communications ,report preparation ,program analyses and development. Cost conscious ,safety oriented and empathetic .A strong communicator with excellent interpersonal skills ,which allows development of rapport with individuals on all levels . A sound professional attitude ,strong work ethic and pride in personal performance.

WORK EXPERIENCE

Senior Biologist Barrett's Biological Surveys, Imperial County, CA April 2016-currently.
Principal Biological Consultant, Barrett Enterprises. Imperial, CA December 2001 - currently. Compile information and complete local, state, and federal government forms; such as conditional use permits, reclamation plan applications, Financial Assurance Cost Estimates, zone changes, CEQA, Environmental Evaluation Committee responses, and 501 (c)(3) tax exemption applications. Act as liaison between local businesses and local, state, and federal government agencies. Certified to survey for Flat-Tailed Horned Lizards in California and Arizona. Certified to survey the Desert Tortoise.
Kruger- Environmental Compliance Coordinator (ECC) for Seville Solar Complex for a 626-acre solar farm in Imperial County, CA. Compiled and submitted data and reports for APCD such as equipment lists and man hours, water hours for dust suppression; Planning reports such as weekly monitoring reports and scheduling with the third party monitor for work on BLM land; Assisted in writing the Emergency Response Action Plan; CDFW quarterly reports for the Incidental Take Permit for the Flat Tail Horned Lizard (FTHL), CNDDB reports, FTHL Observation Data Sheets, site tours and any other information required by CDFW; Agriculture Commissioner's Office quarterly reports; provided the hazardous reporting information for the CERS online reporting system; assisted writing the FTHL ITP; trained new hires; contacted various local businesses for different on-call services; also provided any updates for plans and schedules necessary throughout the life of the project; etc. (January 2015- March 2016).
Grant writing experience: Awarded two grants for BUOW educational programs for $15,000 each from Imperial Valley Community Foundation. Awarded $35,700 for a total of $75,000 with matching funds to establish the Imperial Valley Small Business Development Center with the Imperial Reginal Alliance. Awarded $450,000 from the California Public Utilities Commission for a broadband connectivity initiative in Imperial County with Imperial Reginal Alliance and Imperial Valley Economic Development Corporation (IVEDC).

FIELD EXPERIENCE

Ms. Barrett has done the field work and contributed to the required reports for the following projects:
•**8ME-Burrowing Owl/MBTA/Avian Mortality Monitoring and training for the Mount Signal Solar Projects** in Calexico, CA (April 2010-currently)
•**Salton Sea Species Conservation Habitat Project** - Imperial County, CA: Nov 2020 -current monitoring construction for desert pupfish, Ridgway Rails and other species. Found both species on site and consulted with agencies for protective measures.
•**Burrtec- FTHL/MBTA Surveys** in Salton City, CA: Team leader for eight people to complete a pre-construction site sweep for 320 acres in Imperial County. 2014-2022
•**Applied Biological Consulting- Approved Biological Monitor on DPV2**: The 500kV transmission line traverses approximately 153 mi from Bythe, CA to Menifee in Riverside County, CA. Crossing private,

state and Federal lands, such as the Bureau of Land Management [BLM], U.S. Forest Service [USFS]. Desert tortoise, nesting birds, fringe toed lizard, flat tailed lizard (November 2011 to May 31, 2013)

Chandi Group, Conduct Habitat Assessment Survey (as outlined in Western Riverside Multispecies Habitat Conservation Plan: Burrowing Owl/Narrow Endemic Species) within the City of Jurupa Valley, Riverside County, 2015

EDUCATION AND TRAINING

Received Bachelor of Science in Business Administration with a focus on Management, along with Economics and Leadership minors, December 2000. Humboldt State University, Arcata, CA.

Special Status/listed species observed/ identified, surveyed, monitored and/or relocated: Mohave desert tortoise, Coachella valley milkvetch, Desert kit fox, Mountain lion, Coachella valley fringe toed lizard, Mohave fringe toed lizard, Stephen's kangaroo rat, Mohave ground squirrel, Coast horned lizard, Flat-Tail Horned lizard, Burrowing Owl.

Extensive knowledge in southwestern United States, non-migratory and migratory avian biology and ecology. Strong knowledge of common Flora and Fauna communities associated with Southern California and surrounding environs. CEQA, NEPA, California Endangered Species Act (CESA) and Federal Endangered Species Act (ESA) knowledge gained through work experience. I have excellent analytical skills, multi-tasking and writing abilities. My past work experience has provided me with many years of hands on experience working with and managing others to find practical solutions to solve problems and achieve common goals.

CERTIFICATIONS/ WORKSHOPS

Desert Pupfish Training CA Department of Fish and Wildlife Sharon Keeney, Summer/Fall 2019-21

Introduction to Plant Identification CA Native Plant Society June. 2019

FTHL Workshop, 2008 El Centro BLM office.

Yuma Clapper Rail Training Colorado River Yuma Bird Festival AZ Game and Fish 2008

USFW Desert Tortoise Egg Handling Desert Tortoise Council Survey Techniques Workshop Certificate, 2008 and 2010.

Anza Borrego State Park Wildflower Identification Workshop, 2010.

Southwest Willow Flycatcher Workshop Kernville, CA, 2010.

SCE TRTP Construction Monitoring Training Class and WEAP Redlands, CA 2011.

DPV2 Construction Monitoring Training Class and WEAP Santa Ana, CA 2011.

Helicopter flight trained on DPV2, 2012.

Certified to handle/ move venomous snakes on DPV2, 2012.

Bat monitoring with Ms. Pat Brown BLM El Centro, CA Office, 2010.

Salton Sea International Bird Festival 2007 Coordinator

Mountain Plover/ Long-billed Curlew surveys, L.A. Museum of Natural History

Presented at the Fourth Annual BUOW Symposium in Pasco, Washington, 2014.

Board Member- Colorado River Citizens Forum, 2014-2016.

BUOW Educational outreach grantee from IVCF, interacting with IID, IVROP, ICFB, Ag Commissioner's Office, 2015.

Friends of the Sonny Bono National Wildlife Refuge, Member 2015

Michel D. Remington

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Brawley, CA 92227
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Objective

Seeking: An advanced position in Environmental Compliance or Natural Resources Conservation in order to provide the best means of designing, planning, preventing, controlling and remediating environmental impacts and hazards for any organization or company. Goal of minimal to no impact on the mission and goals of the organization due to environmental regulatory constraints.

Offering: Practical experience and education in environmental policy, compliance and management; knowledge of federal, state and local environmental regulations/requirements; capacity for hard work and effective communication skills.

Skills: Proficient in staff supervision and personnel management. Skilled in environmental assessments and document preparation, specifically in compliance with the National Environmental Policy Act, the California Environmental Quality Act, as well as complying with the federal and state of California Endangered Species Acts. Skilled in Hazardous Waste and Materials handling, storage and disposal as well as emergency spill response and compliance. Certified in the operation and management of an Emergency Operation Center and related emergency management and recovery processes in a disaster. Excellent ability in coordinating and negotiating regulatory agency demands for various mitigation/compensation for potential environmental impacts of a variety of projects. Skilled in facilitating process improvement teams. Proficient in computer programs such as Microsoft Word, Excel, PowerPoint, and Internet.

Experience

September 2011–March 2022 U. S. Navy Naval Air Facility, El Centro, CA

Installation Environmental Program Director

Evaluated all Naval Air Facility operations and projects for compliance with local, state, and federal environmental laws and regulations. Supervised the preparation of all Environmental Impact Statements, Environmental Assessments, and Categorical Exemptions. Supervised staff negotiations for all threatened/endangered species and special status species mitigation/compensation for habitat impacts.
Supervised six environmental project specialists who provided environmental compliance in all areas of environmental media including Clean Water Act (Storm Water, Wastewater, Drinking Water, SPCC), Clean Air Act, Natural Resources Management, Cultural Resources Management, Hazardous Materials, Solid and Hazardous Waste Management in compliance with all federal, state, and local regulations.

September 1981–September 2011 Imperial Irrigation District Imperial, CA

Biologist / Environmental Compliance Coordinator / Supervisor, Environmental, Regulatory & Emergency Planning

Evaluated all water and power projects for compliance with local, state, and federal environmental laws and regulations. Supervise the preparation of all Environmental Impact Reports, Environmental Impact Statements, Environmental Assessments, Negative Declarations, and Categorical Exemptions. Negotiate all endangered species mitigation/compensation for habitat impacts.

Supervised:

four environmental specialists in the development of California Environmental Quality Act and National Environmental Policy Act documents
one regulatory compliance specialist to audit, identify and correct all environmental compliance areas at the District
five hazardous materials/waste staff in coordinating, managing, storing and disposal of all hazardous wastes and conducting emergency spill response within the District service area of approximately 7,000 square miles
four emergency management staff in operation, coordinating and managing IID's Emergency Operation Center and related response and recovery in a disaster; and
the environmental compliance and assessment/mitigation for major projects such as the $5M Environmental Mitigation Program for the 32-mile All American Canal Lining Project, the new Imperial Valley Substation to Dixieland Transmission Line, etc.

1980–1981 **Imperial County Agricultural Commissioner** **El Centro, CA**
Agricultural Biologist II

Assisted in the development of the Pesticide Use Enforcement section of the department.
Inspected aerial pesticide application operations and enforced state regulations through citations and fines.

1972-1977 **U.S. Navy**
Aviation Storekeeper Petty Officer Third Class (AK3), Honorable Discharge.

Wildlife and Natural Resources Certification/Qualification/Experience since 1986:

Flat-tailed Horned Lizard Survey Protocol
Western Burrowing Owl Survey, Avoidance Mitigation, Relocation Protocol
Various Migratory Bird Species Survey, Avoidance, Mitigation Protocol
Desert Tortoise Survey Protocol
Invasive Species Mitigation/Control (Hydrilla; Quagga Mussel; Salt Cedar)

Environmental Compliance Qualification/Experience:

National Environmental Policy Act [(NEPA) EIS; EA; CATEX]
California Environmental Quality Act (CEQA) EIR; NEGDEC; CATEX]
Endangered Species Act [(ESA) Consultation; BO; BA]
California Endangered Species Act [(CESA) Consultation; BO; BA]
Cultural Resources Management (SHPO and Tribal Consultation)
Clean Air Act Permitting
Clean Water Act (NPDES; Drinking Water; Wastewater; Stormwater Spill Prevention Control and Countermeasure permitting)
Hazardous Materials and Hazardous Waste Management (OSHA; RCRA)
ISO 14001 Environmental Management System

Education

1977–1980 California State Polytechnic University Pomona, CA
BS, Agricultural Biology.

1996 - 1998 San Diego State University, Imperial Valley Campus
Graduate course work towards Masters degree in Public Administration

Honors/Awards

1989 US Department of Agriculture, Animal and Plant Health Inspection Service
Award for Distinguished Service – Hydrilla Research Program - "Awarded in recognition of outstanding contributions in support of the Agricultural Plant Health and Inspection Service mission of protecting American agriculture, and for outstanding accomplishments in pioneering biological control of hydrilla, which resulted in the unrestricted flow of irrigation water sustaining a major agricultural region."

2011 American Red Cross All Star Award
For leadership role and developed expertise and commitment to the American Red Cross

2011 Environmental Excellence Award from the National Association of Environmental Professionals (NAEP) - NAEP award in the category of Conservation Programs for all of the environmental conservation and mitigation involved in the All-American Canal Lining Project.

Interests

Volunteer Disaster Coordinator for the American Red Cross San Diego/Imperial Counties, Reading, Hiking, Travel.

Appendix 6

CULTURAL RESOURCES SURVEY REPORT FOR THE INDUSTRIAL HEMP PROCESSING FACILITY PROJECT IMPERIAL COUNTY, CALIFORNIA

Prepared for:

Salton Group LLC
2711 N. Sepulveda Blvd Ste 233
Manhattan Beach, CA 90266

Submitted by:

Tierra Environmental Services
10650 Scripps Ranch Boulevard, Suite 105
San Diego, CA 92131

Michael Baksh, Ph.D.
Dominique Diaz de Leon, B.A.
Andres Berdeja, B.A.
Kyle Stankowski, B.S.

June 08, 2022

National Archaeological Data Base Information
Type of Study: Cultural Resources Survey
Sites: N/A
USGS Quadrangles: Heber 7.5' Quadrangle (1:25,000)
Area: 44.81 Acres
Key Words: Imperial County, Kumeyaay, Lake Cahuilla, Negative Archaeological Survey

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ABSTRACT

Tierra Environmental Services (Tierra) was retained to conduct an intensive archaeological survey of 44.81 acres for the Industrial Hemp Processing Facility (Project)in Imperial County, California. The Project intends a zone change for proposed plans to develop the property to process the stalk of grain hemp through a process called decortation, and to utilize and renovate an existing building/structure on the property to house the decorticator equipment and store the finished fiber and hurd materials under a controlled environment. The Project area will be developed over 50% of the lot size at about 25 acres. Future plans include co-locating a dry and cold storage facility in undeveloped areas. Archaeological and historical research included a records search, literature review, examination of historic maps, and an intensive pedestrian survey of the Property.

Cultural resource work was conducted in accordance with the California Environmental Quality Act (CEQA) and its respective implementing regulations and guidelines. The County of Imperial will assume the role of lead agency for the Project.

The record search was conducted by the South Coastal Information Center (SCIC) at San Diego State University to identify any previously recorded cultural resources within the Project area and to determine the types of resources that might occur in the Project area. The records search identified 20 cultural studies and seven resources previously recorded within a half-mile search radius, with no previously recorded resources identified within the Project area.

A Native American Contact Program has been initiated to ascertain further prehistoric knowledge from the local Tribes and the Native American Heritage Commission. To date, no responses have been received; this document will be updated with any tribal responses as they are received prior to finalization.

In addition to the archival research, Dr. Michael Baksh conducted an intensive pedestrian survey of the Project area by on May 30, 2021. Overall surface visibility within the Project area was excellent and no new or previously recorded resources were identified within the Project site. No further archaeological work is recommended at this time.

In the event unanticipated, buried prehistoric archaeological resources (lithic material, faunal, pottery, etc.) or historical archaeological resources (ceramics, building materials, glassware, etc.) are unearthed during construction or any ground disturbing activities within the Project area, additional resource treatments would become necessary. Once a potential resource has been identified, all work within 100 feet must be halted until the find can be assessed by a qualified archaeologist.

If human remains are encountered during the proposed work, no further excavation or disturbance may occur in the vicinity of the find until the County coroner has been contacted. California Health and Safety Cod 7050.5 states (a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code. (b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains area discovered has determined that the remains are not subject to the provisions of Section 27481. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or to his or her authorized representative, notifies the coroner of the discovery if recognition of human remains. (c) If the coroner determines that the remains are not subject to his or her authority and if the coroner

recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

I. INTRODUCTION

A. Project Description

Tierra Environmental Services, Inc. (Tierra) conducted a cultural resources study in support of an Industrial Hemp Processing Facility Project (Project). The Project intends a zone change for the proposed plans to develop the property to process the stalk of grain hemp through a process called decortation, and to utilize and renovate an existing building/structure on the property to house the decorticator equipment and store the finished fiber and hurd materials under a controlled environment. Over 50% of the parcel area, or about 25 acres is currently proposed to be developed. Future plans include co-locating a dry and cold storage facility in undeveloped areas.

The Project site is situated on APN/Parcel 057-010-052-000 immediately north of Calexico in southern Imperial County, California (Figure 1). The Project site is located approximately one-half mile north of the Mexico/U.S. Border, less than approximately two miles southeast of the city of Heber, less than seven miles west of the Heber Dunes State Vehicular Recreation Area (SVRA), and less than two miles east of the New River that connects to the Salton Sea. The Project site is located adjacent to and north of the All American Canal and approximately one-half mile north of the California State Route (SR) 98 (SR-98), adjacent to and south of the Dogwood Side Main, immediately west of the Central Main Canal, and approximately half-a-mile east of SR-111, within Section 11, Township 17 South, Range 14 East, on the Heber 7.5' California (1:24,000) USGS Quadrangle (Figure 2). Surrounding land uses include residential, industrial, commercial, and agricultural land (Figure 3).

Cultural resource work was conducted in accordance with the California Environmental Quality Act (CEQA) and its respective implementing regulations and guidelines. The Imperial County Planning & Development Services Department will act as the "Lead Agency" for the Project.

B. Project Personnel

The cultural resource inventory has been conducted by Tierra Environmental Services (Tierra), whose cultural resources staff meets federal, state, and local requirements. Dr. Michael G. Baksh served as Principal Investigator and provided overall Project management. Dr. Baksh has a Ph.D. in Anthropology from the University of California at Los Angeles and has more than 35 years conducting archaeological investigations within the southwestern United States in compliance with Section 106 of the NHPA. Ms. Dominique Diaz de Leon served as primary report author. Ms. Diaz de Leon has a B.A. from the University of California, Santa Barbara and 8 years of experience in southern California archaeology. Mr. Andres Berdeja served as field crew chief and assisted with supporting documentation and GIS. Mr. Berdeja has B.A from California State University of San Marcos and 8 years of experience in southern California archaeology. Kyle Stankowski served as report author. Mr. Stankowski has a B.S. from the University of Leicester, England and over 12 years of experience in southern California archaeology. Resumes of lead Project personnel are included in Appendix A.

C. Structure of the Report

This report follows the State Historic Preservation Office's guidelines for Archaeological Resource Management Reports (ARMR). The report introduction provides a description of the project and associated personnel. Section II provides background on the Project site and previous research. Section III describes the research design and survey methods, while Section IV describes the inventory results, including individual site descriptions. Section V provides a summary and recommendations.

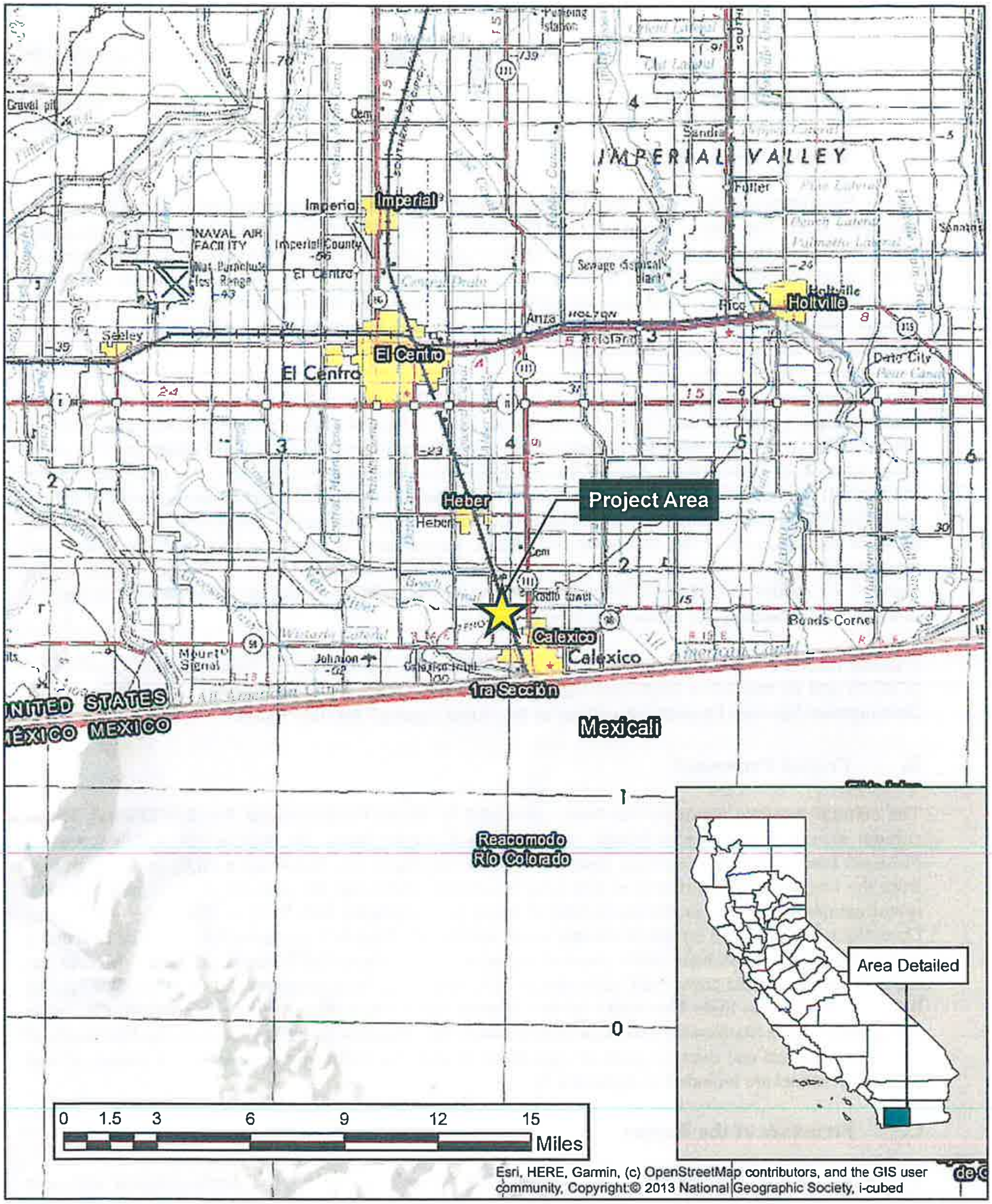
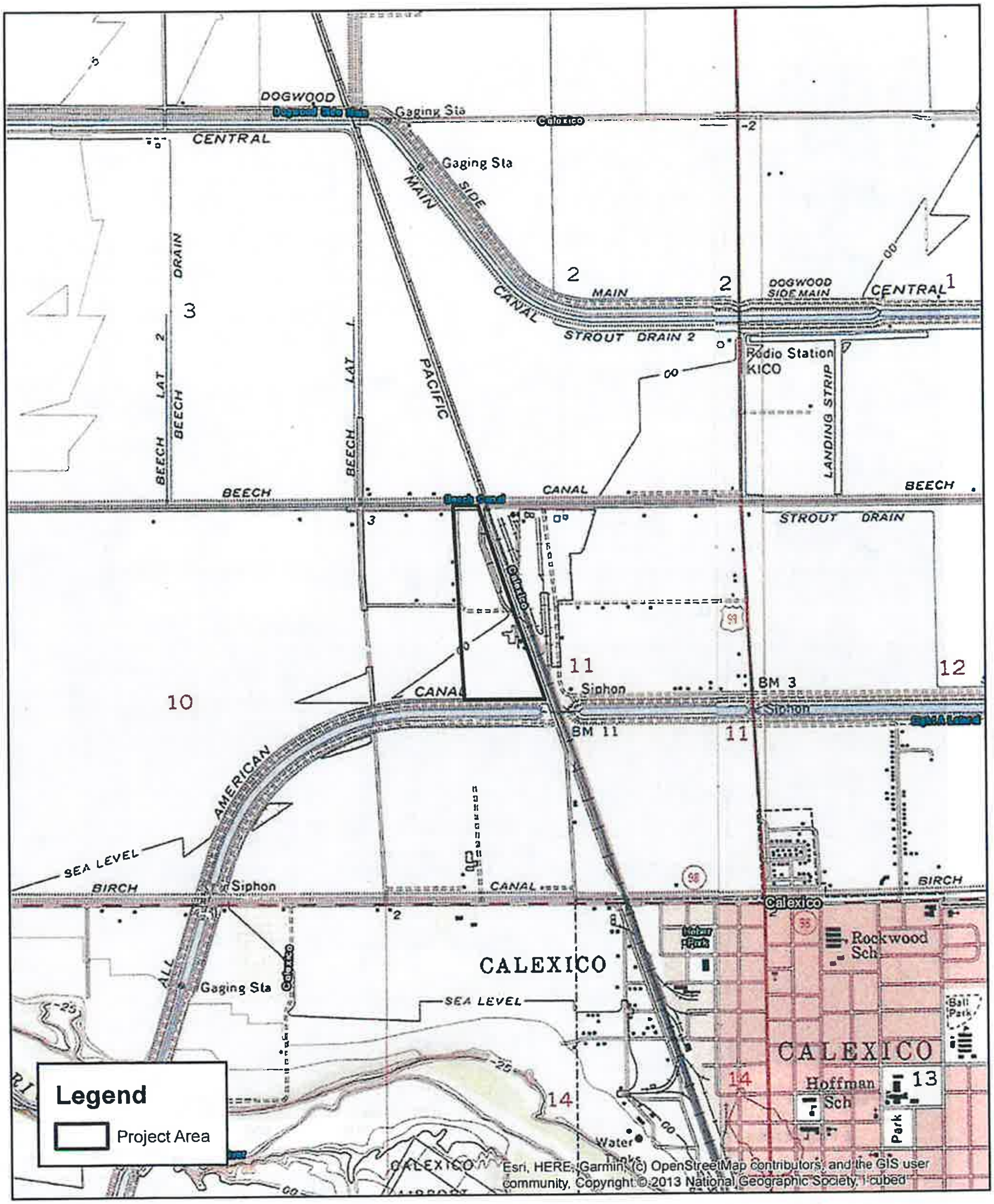


Figure 1. Regional Location Map

TIERRA
ENVIRONMENTAL SERVICES

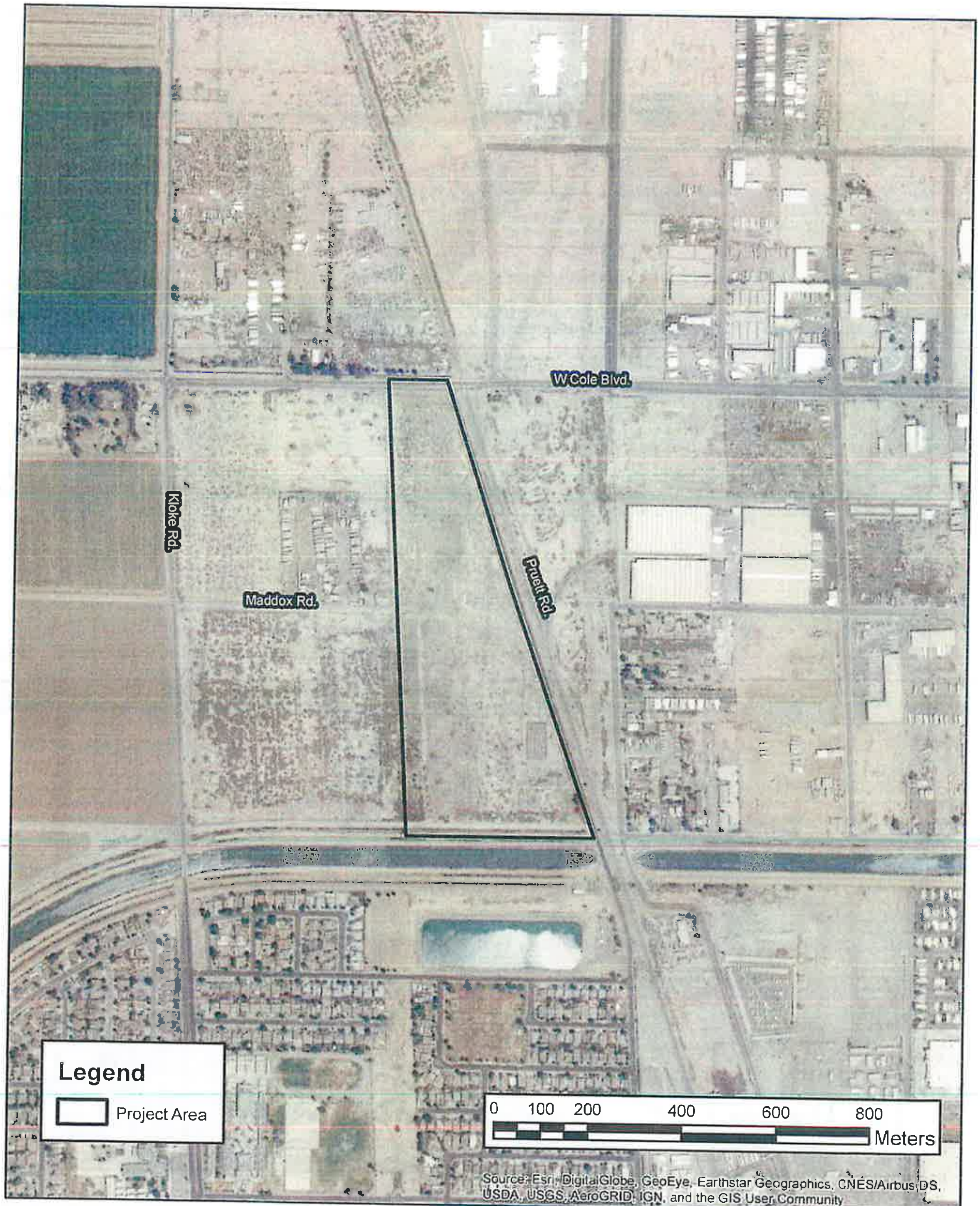


USGS 7.5' Quadrangle:

Figure 2. Project Location Map

0 1000 2000
FEET

TIERRA
ENVIRONMENTAL SERVICES



Imagery Date: May 2022

Figure 3. Area of Potential Effects

TIERRA
ENVIRONMENTAL SERVICES

II. NATURAL AND CULTURAL SETTING

The following environmental and cultural background provides a context for the cultural resource inventory.

A. Natural Setting

The Project area is relatively flat and is located in what was once the lakebed of the prehistoric Lake Cahuilla. During the late Cretaceous (>100 million years ago) a granitic and gabbroic batholith was being formed under and west of the Project area. This batholith was uplifted and now forms the granitic rocks and outcrops of the San Jacinto Mountains. At about the same time that these mountains were being uplifted, the Salton Trough was dropping, reaching points well below sea level. The Salton Trough to the north of the Project area began slowly filling with sediments from streams draining the adjacent mountains and from the Colorado River. The Colorado River occasionally shifted from its Gulf of California delta and flowed north into the Salton Trough, forming freshwater Lake Cahuilla.

At its highest level, this body of water covered more than 60 miles of the lowest portion of the basin. Lake Cahuilla was a resource that had profound effects on the prehistoric people who lived in the Project area and groups in the surrounding region. This lake probably last existed in the 1500s (Laylander 1994). It supplied the southern Coachella Valley and northern Imperial Valley with not only water but other lacustrine resources such as freshwater mussels, waterfowl, and fish. Even without the support of direct flow from the Colorado River, the Salton Basin, Borrego, and other dry lake basins would sometimes contain seasonal shallow ponds supplying additional water resources (Bean 1972).

The proposed Project area is located approximately half-a- mile north of the Mexico/U.S. Border, less than approximately two miles southeast of the city of Heber, less than seven miles west of the Heber Dunes SVRA, and less than two miles east of the New River that connects to the Salton Sea. Nearby existing developments include residential, industrial, commercial, and agricultural land.

The City Calexico (City) is a port of entry and trade and shipping center within Imperial County. The City is heavily characterized by industrial, agricultural, and residential development. The Property is just north of the U.S. and Mexico border and the city of Mexicali, Mexico. The City is incorporated and within the jurisdiction of the County of Imperial Valley.

The Project site is located in the southern portion of Imperial County. The elevation of the Property ranges from two feet Below Mean Sea Level (BMSL) to three feet Above Mean Sea Level (AMSL). The area is composed of disturbed land consisting of a spur associated with the Southern Pacific Railroad, a residential building/home, and development associated with a feeding lot containing associated structures. Associated structures composed of a cinder block and concrete feeding lot and a utility shed are still standing within the Project site. In the immediate vicinity of the Project site, various businesses consisting of trucking companies, transportation services, mechanic shops, junk yards, and parking lots are visible. Residential development is present just south of the Project site and adjacent to and south of the All American Canal. Industrial and business development is present to the immediate east of the Project site, and agricultural development is present to the immediate west and north of the Project site. The area consists of flat terrain.

The Project area is dependent water imported from the Colorado River via the All American Canal located adjacent to and south of the Project site. This resource has made water readily available for domestic use and agriculture. The New River, located just to the west of the Project site, is not a viable water source due to its contaminated state. The New River is considered to be one of the most polluted rivers in the United

States. The river originates in Mexicali, Mexico, and flows into the U.S. through the City of Calexico. The New River is one of the largest public health issues the County has faced (City of Calexico 2020).

The soils series present within the Project site consists of Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes (USDA N.D.). The Imperial series are typically pinkish gray and light brown, calcareous, silty clay to depths of 60 inches or more. Vegetation consists of saltbush, creosotebush, Sueda, and Allenrolfea; mesquite and Tamarix grow where their roots can reach ground water (USDA 2015). The Glenbar series consists of very deep, well drained soils that formed in stratified stream alluvium. Glenbar soils are on flood plains and alluvial fans and have slopes of 0 to 3 percent. Vegetation consists of creosotebush, mesquite, paloverde, ironwood, salt cedar, cacti, annual weeds and grasses (USDA 2015).

Animal resources in the region include coyotes, rabbits, and various rodent, reptile, and bird species. Coastal resources are located more than 90 miles west and include shellfish and other animal species.

B. Cultural Setting

Paleoindian Period

The earliest well documented prehistoric sites in southern California are identified as belonging to the Paleoindian period, which has locally been termed the San Dieguito complex/tradition. The Paleoindian period is thought to have occurred between 12,000 years ago, or earlier, and 8,000 years ago in this region. Although varying from the well-defined fluted point complexes such as Clovis, the San Dieguito complex is still seen as a hunting focused economy with limited use of seed grinding technology. The economy is generally seen to focus on highly ranked resources such as large mammals and relatively high mobility which may be related to following large game. Archaeological evidence associated with this period has been found around inland dry lakes, on old terrace deposits of the California desert, and also near the coast where it was first documented at the Harris Site.

Early Archaic Period

Native Americans during the Archaic period had a generalized economic focus on hunting and gathering. In many parts of North America, Native Americans chose to replace this economy with types based on horticulture and agriculture. Coastal southern California economies remained largely based on wild resource use until European contact (Willey and Phillips 1958). Changes in hunting technology and other important elements of material culture have created two distinct subdivisions within the Archaic period in southern California.

The Early Archaic period is differentiated from the earlier Paleoindian period by a shift to a more generalized economy and an increased focus on use of grinding and seed processing technology. At sites dated between approximately 8,000 and 1,500 years before present, the increased use of groundstone artifacts and atlatl dart points, along with a mixed core-based tool assemblage, identify a range of adaptations to a more diversified set of plant and animal resources. Variations of the Pinto and Elko series projectile points, large bifaces, manos and portable metates, core tools, and heavy use of marine invertebrates in coastal areas are characteristic of this period, but many coastal sites show limited use of diagnostic atlatl points. Major changes in technology within this relatively long chronological unit appear limited. Several scientists have considered changes in projectile point styles and artifact frequencies within the Early Archaic period to be indicative of population movements or units of cultural change (Moratto 1984) but these units are poorly defined locally due to poor site preservation.

During the 1940s and 1950s, D.L. True located a number of Archaic Period sites in inland northern San Diego County that appeared to exhibit an assemblage different from the coastal Archaic material (True 1958, 1980; True and Beemer 1982). These sites were typically on small saddles and hills overlooking stream drainages and were characterized mainly by surface artifact scatters of basin and slab metates, manos, some scraper planes, debitage and rarely discoidals. True originally called this material "Old Complex" sites and later the Pauma Complex (True 1958; True and Beemer 1982). True and Beemer concluded after an examination of a number of Pauma sites, that it was still too early to determine whether there was a relationship between the La Jolla and Pauma materials, and whether that relationship is "temporal, economic, or cultural in nature" (1982:258). Given that the distance between the two very different environments (coastal and inland) is only a few dozen kilometers, and the sites appear to be contemporaneous, it seems most rational that the different materials are seasonal manifestations of a typical single Archaic mobility strategy using coastal and inland resources.

Similar environmental variability exists in the Archaic in the Southwest and other regions, and all varying sites are considered to be different aspects of annual positioning strategies of the same hunter-gatherer groups (Bayham et al. 1986; Sayles 1983; Sayles and Antevs 1941). It seems likely that this is the case in northern San Diego County, but as noted by True and Beemer, "ultimate resolution of this kind of problem requires a direct examination and analysis of each collection by the same investigator" (1982:258). This problem remains an important issue in southern California prehistory.

Late Archaic or Late Prehistoric Period

Around 2,000 B.P., Takic-speaking people from the Great Basin region began migrating into southern California, representing what is called the Late Prehistoric period. The Late Prehistoric period in this portion of Imperial County is recognized archaeologically by smaller Projectile points, the replacement of flexed inhumations with cremation, the introduction of ceramics, and an emphasis on inland plant food collection and processing, especially acorns and mesquite (Kroeber 1925). Inland semi-sedentary villages were established along major water courses and around springs, and montane areas were seasonally occupied to exploit mesquite, acorns, and piñon nuts. Mortars for mesquite and acorn processing increased in frequency relative to seed grinding basins.

The most numerous of the archaeological resources in the Imperial Valley date to the Late Prehistoric period. The majority of the sites studied were small processing sites, associated with the grinding of vegetal resources and dating to the Late Prehistoric period. Larger habitation sites were less common, but displayed a wider range of activities and longer periods of occupation (Jefferson 1974). Typical artifacts at these sites include Desert Side-notched and Cottonwood Triangular Projectile points and Lower Colorado Buff Ware and Tizon Brown Ware ceramics. Lithic artifacts are typically made from chert, volcanic, or quartz material.

The Kamia or Desert Kumeyaay occupied the Project area during this period. The Kamia are a subgroup of the Yuman family of the Hokan stock, and are therefore closely related linguistically to the Mohave, Quechan, Maricopa, Paipai, Cocopa and Kiliwa (Kendall 1983:5). The extreme diversity of Cahuilla territory nearly reflected the range of environmental habitats allowed in inland southern California. Topographically, their territory ranged from the New River and Alamo River sloughs to San Felipe Creek in the north and east to the Algodones Dunes. Ecological habitats included the full range of mountains, valleys, passes, foothills, and desert area (Shipek 1982).

Group size and the degree of social interaction therefore varied over the course of an annual cycle. The basic unit of production was the family, which was capable of great self-sufficiency, but Kamia/Kumeyaay families, like other hunter-gatherers, moved in and out of extended family camps or villages opportunistically as problems or opportunities arose (Lawton and Bean 1968). Thus, whereas single families occasionally exploited low-density, dispersed resources on their own, camps or villages of several families formed at other times, particularly when key resources (such as water) were highly localized.

Going beyond the basic social unit of the family, the Kamia/Kumeyaay were organized by some form of descent system. From the available ethnographic data it is not immediately obvious as to whether they were organized into lineages or clans. Indeed, their features of social organization appear to have shared some qualities of both systems, and it may be speculated that the society had begun evolving from a lineage system to a clan system prior to the time of Western contact. In any case, the Kamia/Kumeyaay traced their descent patrilineally (i.e., through one's father), were exogamous at the level of the descent group (i.e., one had to marry outside one's own lineage or clan), and practiced patrilocal residence (i.e., a married woman lived with her husband's father's relatives). Descent groups apparently "owned" land and certain other resources. According to Kroeber (1925:720), "It would appear that each "clan" owned a tract and that each locality was inhabited by members of one clan, plus their introduced wives". Regarding other resources, Spier (1923:307) observed that some "gens" (i.e., clans) owned patches of certain trees and "Each gens owned one or more eyries from which eaglets were taken for use in the mourning ceremony". Apparently, however, resource ownership did not extend to the oak groves in the mountains (ibid), which probably reflects the extreme importance placed upon this resource for the adaptation and survival of the entire society. Gifford (1931: 50-51) reported that the Kamia had no clan chiefs and recognized a tribal chief like the Quechan, however this form of leadership may have been introduced after European contact.

Important plant foods exploited from the Kamia's diverse habitat included mesquite and screw beans, pinyon nuts, and various cacti. Important but less utilized plants included various seeds, wild fruits and berries, tubers, roots, and greens. Women were instrumental in the collection and preparation of vegetal foods (Gifford 1931).

The extent to which the Kamia/Kumeyaay practiced agriculture at the time of European contact has not been established. Gifford (1931) felt that agriculture, which had been well established among the Colorado River groups at the time of Western influence, had diffused into the Imperial Valley and was practiced by all of the Kamia lineages. Similarly, Lawton and Bean (1968) have suggested that certain Cahuilla groups cultivated corn, beans, squash and melons, like the neighboring Colorado River tribes.

Kamia culture and society remained stable during the period of missionization on the coast. It was not until the American period that Kamia were heavily displaced. The introduction of European diseases greatly reduced the native population of southern California and further disrupted the way of life of the native inhabitants (Lawton and Bean 1968).

Ethnohistoric Period

The Ethnohistoric period refers to a brief period when Native American culture was initially being affected by Euroamerican culture and historical records on Native American activities were limited. When the Spanish colonists began to settle California, the Kamia were on the margins of the mission system. They retained more of their culture due to their distance from mission influence. Although clans moved from place to place within their general territory, some locations were occupied for longer periods and by more people than others (Almstedt 1982:13). These settlements, which may be regarded as villages, "were places to which the people returned from their foraging, where they spent winter months, sometimes in association with other clans Some larger groups appear to have had sizable summer as well as winter villages" (Almstedt 1982:13). Within each village there was a dance floor, extensive milling stations, family living areas, and possibly a sweathouse and granary. If it was a winter camp, a house would have been set directly on the ground and a fireplace built on the ground by the door (Spier 1923:338).

European contact introduced disease that dramatically reduced the Native American population and helped to break down cultural institutions. The transition to a largely Euroamerican lifestyle occurred relatively rapidly in the nineteenth century.

C. Prior Research

The archaeological inventory includes archival and other background studies in addition to Tierra's field survey of the Project. The archival research consisted of literature and records searches at local archaeological repositories in addition to an examination of historic maps, aerial photographs, and historic site inventories. This information was used to identify previously recorded resources and determine the types of resources that might occur in the survey area. The methods and results of the archival research are described below.

The records and literature search for the Project was conducted at the South Coastal Information Center at San Diego State University. The records search included a mile radius of the Project site to provide background on the types of sites that would be expected in the region (Appendix B). The records search identified a total of 20 archaeological investigations, and seven previously recorded resources within a half-mile radius of the Project site. Table 1 summarizes the investigations, and Table 2 summarizes the resources. Historic research included an examination of a variety of resources. The current listings of the National Register of Historic Places (NRHP) were checked through the NRHP website. The California Inventory of Historic Resources (State of California 1976) and the California Historical Landmarks (State of California 1992) were also checked for historic resources.

The 1940 Heber (1:62500) USGS Quadrangle shows the presence of six buildings/structures within the Project site and immediately adjacent to and west of the current delineation of Pruett Road running southeast to northwest. A spur connected to the Southern Pacific Railroad previously curved westward into the northern half of the Project site, and the All American Canal is visible immediately adjacent to and south of the Project site. In the 1957 Heber (1:24000) USGS Quadrangle, three buildings/ structures remained within the southern half of the Project site and adjacent to and west of Pruett Road. Maddox Road is depicted as an undeveloped east-west road that previously transected the Project site, straight through the middle, but no longer exists. The 2012 to 2021 Heber (1:24000) USGS Quadrangles no longer depict the buildings/structures or the spur connected to the Southern Pacific Railroad. No buildings/structures are visible on the most recent topographic maps ranging from 2012 to 2021 (1:24000) USGS Quadrangle, despite two existing structures in the southern half of the Project site.

Table 1. Cultural Resource Investigations Previously Conducted Within a Half-Mile Radius of the APE

**shaded (or bolded) entries indicate intersection with current APE*

Report #	Title	Author	Year
IM-00063	Archaeological Examination of a Proposed Geothermal Testing Site Near Heber, California	Von Werlhof, Jay et al.	1976
IM-00066	Archaeological Record Search of the Heber, California, Region	Von Werlhof, Jay et al.	1976
IM-00072	Archaeological Examinations for the Wastewaters Facilities Plan Report Sewer Rehabilitation, Calexico, California	Von Werlhof, Jay et al.	1976
IM-00123	Draft Environmental Impact Report for the Heber Geothermal Demonstration Project	Vtn Consolidated, Inc.	1977
IM-00135	Cole Property Annexation, Calexico, Imperial County	Multi Systems Association	1978
IM-00192	Draft Master Environmental Impact Report for a 500-Megawatt Geothermal Development at Heber, Imperial County, California	Vtn Consolidated, Inc.	1979
IM-00368	Chevron Geothermal Company of California Supplemental Project Information for the Auxiliary Production Facility Heber Geothermal Unit, Imperial County	Imperial County Planning Department	1987
IM-00441	Environmental Assessment/Initial Study for the Placement of Fiber Optic Facilities Between Salton Microwave Station and Calexico California	ENSR Consulting and Engineering	1990
IM-00506	Cultural Resource Overview, All- American Canal Lining Project, Final Report	Green, Eileen and Joan Middleton	1994
IM-00532	Archaeological Assessment of the Kloke Tract for the City of Calexico	Collins, G. Edward	1997
IM-00605	Preliminary Engineering Report for the Kloke Tract	Barrett Consulting Group	1996
IM-00647	Archaeological Assessment of the Kloke Tract	City of Calexico	1997
IM-00829	The All-American Canal: An Historic Properties Inventory and Evaluation	Schaefer, Jerry and O'Neill, Collin	2001
IM-00928	California State Historic Preservation Office - Para Renta	AEI Consultants	2002
IM-00956	Archaeological Reconnaissance of Los Lagos, Imperial County, California	Underwood, Jackson	2005
IM-01080	Archaeological Examinations of the Heber Facilities Sewer and Water Improvements Project	Von Werlhof, Jay	1999
IM-01135	Initial Study / Mitigated Negative Declaration – Town Center Industrial Plaza, Calexico, California	HDR	2006
IM-01214	Historic Property Survey Report - The Widening of a 1700-Foot Long Portion of Cole Road Between Kloke Road to the West and the Southern Pacific Railway Right-Of- Way to the East in the County Of Imperial, California	Hovey, Kevin	2006
IM-01252	Draft Environmental Impact Report - Los Lagos Specific Plan, Calexico, California	HDR	2007
IM-01584	"First Supplemental Historic Property Survey Report for the State Route 98 Widening, Phase 1-B, City of Calexico, Imperial County"	Tsunoda, Koji	2015

Table 2	Cultural Resources Previously Recorded Within a Half-Mile of the APE *shaded entries indicate intersection with the current APE		
Site	**Description**	**Recorder**	**Year**
P-13-003311	Historic Site. U.S. Military telegraph line.	Vegel, Joe	1978
P-13-003320	Historic Site. U.S. Military telegraph line.	Vegel, Joe	1978
P-13-007130	Historic Structure. Four-mile segment of an abandoned portion of the original All-American Canal.	HDR, Inc.	2018
P-13-007699	Historic Structure. Half-mile segment of the old Southern Pacific Railroad spur.	Collins, Edward	1997
P-13-008682	Historic Site. Niland to Calexico Railroad associated with the Southern Pacific Railroad.	Ehringer, C.	2011
P-13-009077	Historic Site. Cole Road Pool.	Jordan, Stacey C.	2007
P-13-012744	Historic isolate. Bottle base.	Pigniolo, Andrew R.	2008

Historic aerial photographs, dating from 1953 to 2019, were also analyzed. The 1953 historic aerial photograph shows various sections or pens utilized as a feed lot for cattle with what appears to be two steel sheds in each section throughout most of the Project site. What appears to be a residential home with associated structures can be observed on the south eastern half of the Project site, adjacent to and west of Pruett Road. A shed immediately adjacent to and west of Pruett Road is visible on this historic aerial photograph and is currently standing, as observed during the current survey. A section described as a spur on the northern half of the Project site previously noted during the historic topographic map research may possibly be what is observed on this aerial photograph and contains two long structures along its border. It is not clear that it is part of the railway despite what the topographic map depicts it as. The 1984 historic aerial photograph continues to show the utilization of most of the Project site as a feed lot with steel sheds, the residential home is still visible, and a structure most likely associated with the currently standing cinderblock/cement structure observed during the current survey is still visible. To note, the currently standing cinderblock/cement structure is only half the size of the structure visible on this historic aerial photograph as the original structure continues southward. The steel sheds located within the feed lot are no longer visible on the 1996 historic aerial photograph. The residential home and associated structures remain, and only half of the original size of the currently standing cinderblock/concrete structure remains, depicting the current size of the standing structure. What appear to be storage units or other semi-permanent or non-permanent structures are visible in the immediate vicinity of the cinderbock/concrete structure. The residential home appears to have been demolished on the 2002 historic aerial photograph, with some of its demolished remains still visible. The currently standing cinderblock/concrete structure is also visible and appears to be in similar condition as was observed during the current survey. No remains of the demolished residential home are visible on the 2005 historic aerial photograph. The area described as a spur is still lightly visible with no structures remaining along its perimeter, and continues to disappear over time. The spur is no longer visible on the 2019 historic aerial photograph, but the cinderblock/concrete structure and shed remain as confirmed during the current survey (Historic Aerials 2022)

The records search identified a total of seven previously recorded cultural resources within a mile radius of the Project site. These records provide an idea of the types of cultural resources that might be expected within the project Project site. As indicated in Table 2 all of the recorded cultural resources in the project vicinity are historic in age. These sites are composed of two military telegraph lines, a portion of the All American Canal, a segment of the old Southern Pacific Railroad spur, Niland to Calexico Railroad, Cole Road Pool, and an isolated bottle base.

III. RESEARCH DESIGN AND METHODS

A. Survey Research Design

The goal of the project was to identify any cultural resources that might be affected by the proposed action. To accomplish this goal, background information was examined and assessed, and an intensive pedestrian field survey was conducted to identify cultural remains. Based on the records search and historic map check, cultural resources were not anticipated to be present within the Project site, however, due to the presence of a historic two military telegraph lines, a portion of the All American Canal, a segment of the old Southern Pacific Railroad spur, Niland to Calexico Railroad, Cole Road Pool, and an isolated bottle base within the vicinity of the Project site, the presence of historic artifacts and sites was determined as possible, therefore, an intensive pedestrian survey was conducted.

B. Survey Methods

The literature search for the project was conducted at the South Coastal Information Center of the California Archaeological Inventory at San Diego State University. This records search included site records and reports for the Project site and a one-mile radius of the project along with historic research.

The survey of the Project site was conducted by Dr. Michael Baksh (Tierra Environmental Principal Investigator) on May 30, 2022. The intensive survey used 10-meter transects.

Resources identified during the survey were assigned consecutive temporary numbers (*e.g.* PFTT-TES-001) in the field. Furthermore, temporary numbers may contain an "H" suffix, used to denote historic period resources (*e.g.* PFTT-TES-001H) or in the case of a resource representative of both historic and prehistoric periods, the suffix "/H" was added (*e.g.* PFTT-TES-001/H). Resources identified as isolates received an "i" to indicate isolated finds. As per industry standards, historic artifacts or features were recorded in feet and inches while prehistoric resources were recorded using the metric system. All resources assigned with a temporary number will be given permanent trinomials or primary numbers by the SCIC. No ground disturbing activities or artifact collections were undertaken during the course of this study.

IV. SURVEY RESULTS

An intensive pedestrian survey was conducted for the proposed Project by Principle Investigator Dr. Michael Baksh from Tierra Environmental Services on May 30, 2022. The study was conducted to identify potential cultural resources previously not identified within the Project site. Visibility was good 90% to 100% and the survey used 10-meter transects.

The Project site is composed of disturbed land consisting of modern trash, dirt mounds, and development associated with feedlot activities, a residential home that is no longer standing, and a remaining utility shed and a structure composed of cinder block and concrete walls. The original use of the structure composed of cinder block and concrete walls is unknown. These structures are not considered culturally significant; therefore, they were not recorded as historic resources. Modern trash and soil mounds were also observed throughout the Project site.

The literature and records search identified no previously recorded resources within the Project site, and the survey resulted in no newly recorded cultural resources.

Photograph 1. Industrial Hemp Processing Facility (APN 057-010-052-000), Overview of Project site, View South

Photograph 2. Industrial Hemp Processing Facility (APN 057-010-052-000), A Structure Composed of Cinder Block and Concrete Walls and Pad, View Southeast

Photograph 3. Industrial Hemp Processing Facility (APN 057-010-052-000), Modern Trash and Dirt Mounds, View Northwest

V. SUMMARY AND RECOMMENDATIONS

This cultural investigation was undertaken in response to the proposed Hemp Processing Facility Project, which included a pedestrian survey, a record search at the SCIC, and a Native American Contact Program. The goal of the project was to identify resources that may be impacted by the project.

The Project intends a zone change for the proposed plans to develop the property to process the stalk of grain hemp through a process called decortation, and to utilize and renovate an existing building/structure on the property to house the decorticator equipment and store the finished fiber and hurd materials under a controlled environment. The proposed area to be developed will be over 50% of the lot size at about 25 acres. Future plans include co-locating a dry and cold storage facility in undeveloped areas.

A pedestrian survey was conducted to ascertain if any cultural resources may be present within the Project area and subsequently impacted by the proposed Project. The results of the pedestrian survey were negative with no previously or newly recorded resources identified within the Project site. A utility shed and a feeding lot composed of cinder block and concrete walls are present within the Project site. The structures are not known to be affiliated with anyone of significance, contribute to any broad pattern of local cultural heritage, nor yield additional information to local history further making it not eligible for listing on the CRHR. These structures are not considered culturally significant; therefore, they were not recorded as historic resources.

A records search resulted in twenty cultural studies previously conducted within a one mile radius of the Project area and seven previously recorded resources identified within a mile radius of the Project site, none of which have been recorded within the Project site.

A Native American Contact Program has been enacted with local Tribes and the Native American Heritage Commission. While no Tribal responses have been received related to the current effort, the County will be notified with any tribal responses as they are received.

A. Regulatory Framework

For the purposes of this report, cultural resources describe any expression of human activity on the landscape whether past or present. Within the cultural resources framework are resource types including but not limited to, prehistoric archaeological sites, historical archeological sites, districts, historical buildings and structures, ethnographic sites, Traditional Cultural Properties (TCPs), and isolated artifacts and features. Each of these resources may be evaluated for their potential significance, and if determined eligible to the California Register, are designated as "historic properties".

This archaeological investigation was conducted in compliance with California Environmental Quality Act (CEQA) requirements pertaining to the determination of whether the proposed Project may have an affect on significant cultural resources (PRC 21083.2 and CCR 15064.5). According to CEQA, an impact is considered significant if it would disrupt or adversely affect a prehistoric or historic-era archaeological site or a property of historic or cultural significance to a community, ethnic or social group. The State CEQA Guidelines define a significant historical resource as a resource listed or eligible for listing on the California Register of Historic Resources (CRHR) (PRC 5024.1). A historical resource may be eligible for inclusion in the CRHR if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or is likely to yield, information important in prehistory or history.

Significant cultural resources may be avoided by the proposed Project through a redesign of the Project or construction planning, or protected and preserved through various means. If avoidance or protection of a significant cultural resource is not possible, mitigation measures shall be required as set forth in Public Resources Code 21083.2 (c-1). A non-significant cultural resource need not be given any further consideration (PRC 21083.2 [h]).

B. Recommendations

Of the seven resources recorded within a mile radius of the Project site, none have been previously recorded within the Project site and no new cultural resources were recorded during the intensive pedestrian survey. The utility shed and cinderblock/concrete feeding lot observed within the Project site during the intensive pedestrian survey do not meet the criteria needed for listing on the CRHR. Additionally, the structures are not known to be affiliated with anyone of significance, contribute to any broad pattern of local cultural heritage, nor yield additional information to local history further making it not eligible for listing on the CRHR. No further archaeological work is recommended at this time.

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APPENDIX A

RESUMES OF PRINCIPAL PERSONNEL

MICHAEL G. BAKSH, PH.D.
Principal Anthropologist/Archaeologist
Tierra Environmental Services

Education

University of California, Los Angeles, Doctor of Philosophy, Anthropology, 1984
University of California, Los Angeles, Master of Arts, Anthropology, 1977
San Diego State University, Bachelor of Arts, Anthropology, 1975

Professional Experience

1993-Present	Principal Anthropologist/Archaeologist, Tierra Environmental Services, San Diego, California
1993 Present	Adjunct Professor, Department of Anthropology, San Diego State University
1990-1993	Senior Anthropologist/Archaeologist, Brian F. Mooney Associates, San Diego, California
1985-1990	Research Anthropologist, University of California, Los Angeles
1980-1985	Consulting Anthropologist, Brian F. Mooney Associates, San Diego, California
1976-1983	Research Assistant, Department of Anthropology, University of California, Los Angeles
1973-1975	Supervisory Archaeologist, San Diego State University, San Diego, California
1970-1973	Assistant Archaeologist, San Diego State University, San Diego, California

Professional Affiliations

Fellow, American Anthropological Association
Member, American Ethnological Society
Member, Association of Environmental Professionals
Member, Society for California Archaeology
Advisory Council Member, San Diego Archaeological Center
Permitted by Bureau of Land Management for Cultural Resource Surveys in California
Principal Investigator, City of San Diego
Member, City of San Diego Historic Resources Board

Qualifications

Dr. Michael Baksh received his Ph.D. in Anthropology from the University of California at Los Angeles in 1984. He has been Principal Anthropologist/Archaeologist at Tierra Environmental Services for 22 years. Dr. Baksh's area of specialty is cultural resource management, and he has conducted numerous archaeological surveys, testing projects, and data recovery programs throughout southern California. He has also conducted numerous Native American consultation and ethnohistoric projects throughout the southwestern United States in compliance with Section 106 of the National Historic Preservation Act. He has established an excellent rapport with Native Americans on a wide range of cultural resource management, land use, and planning projects.

Relevant Projects

Ocotillo Express Wind Archaeological Construction Monitoring *(Pattern Energy).*
Dr. Baksh managed the archaeological construction monitoring for the Ocotillo Express Wind Project in Ocotillo, California. The Ocotillo Express Wind Project involved a year-long construction of 112 wind turbines, more than 30 miles of new roads, and numerous associated facilities on desert lands managed by the U.S. Bureau of Land Management. Tierra employed approximately 20 full-time archaeologists and 10 Native Americans for the project.

As-Needed City of San Diego Cultural Resources *(Helix Environmental).*
Dr. Baksh is managing a multi-year As-Needed Cultural Resources contract for the City of San Diego (through Helix Environmental). Commencing in 2011, numerous task orders have been issued for archaeological studies including surveys, testing programs, monitoring projects, historic evaluations, and records searches throughout the City. In addition to providing archaeological staff Tierra is also responsible for coordinating and retaining Native American monitors. Tierra also coordinates with the San Diego Archaeological Center to ensure that all collections resulting from the As-Needed project are properly curated.

Sunrise Powerlink *(San Diego Gas & Electric).*
Dr. Baksh managed the Native American monitoring of the 2010-2012 construction of the Sunrise Powerlink project. The project included the construction of a 118-mile-long 230-kV/500kV transmission line between SDG&E's Imperial Valley Substation near El Centro, Imperial County, to its Sycamore Canyon Substation near Interstate 15 in San Diego, California, and a new substation in Alpine, California. Native Americans monitored whenever ground-disturbing activities occurred within 50 feet of known cultural resource sites. The U.S. Bureau of Land Management served as lead federal agency under NEPA and the National Historic Preservation Act, and the California Public Utilities Commission served as lead state agency under CEQA from October 2010 to June 2012. Tierra retained 43 Native Americans from six Tribes who worked on a daily basis and logged 24,913 hours.

Caltrans As-Needed Cultural Resource Services *(California Department of Transportation).*
Dr. Baksh served as Principal Anthropologist on the Caltrans District 11 (San Diego and Imperial County) As-Needed Cultural Resources contracts from 1992 through 2010. He managed several archaeological surveys and testing programs and was responsible for coordinating Native American involvement and input on specific task orders. One task order included the development of a comprehensive list of Native Americans capable of providing archaeological monitoring and/or ethnographic consultation services on future Caltrans cultural resource management projects. In consultation with over 20 reservations including Kumeyaay, Luiseño, and Quechan Indians, Dr. Baksh prepared a list for Caltrans to draw upon during future projects and thereby help ensure compliance Section 106 of the National Historic Preservation Act and other regulations. Development of the list also involved consultation with the Native American Heritage Commission and local cultural resource management firms.

Model Marsh Archaeological Studies *(California State Coastal Conservancy).*
Dr. Baksh managed several archaeological studies associated with the construction of the 20-acre Model Marsh located in the Tijuana Estuary. These resulted in the identification of a historic resource that was found to be associated with the Naval Electronic Laboratory on Point Loma. Tierra subsequently conducted monitoring and during construction of the Model Marsh and discovered a buried prehistoric site. Tierra tested the site, found it to be significant, and implemented a data recovery program. A total of 41 one-square-meter units were excavated in a timely manner to allow completion of project construction. The investigations were conducted in compliance with all federal, state, and local cultural resource laws and in close coordination with State Parks and the U.S. Army Corps of Engineers.

IID Niland to Blythe Powerline Replacement *(Greystone).*
Dr. Baksh managed the archaeological survey of an approximately 60-mile transmission line corridor along an existing transmission line between substations near Blythe and Niland. Archaeological and historical research included a review of records and literature searches and an archaeological field inventory of the transmission line corridor. The BLM and Department of Defense served as Federal lead agencies for NEPA and NHPA compliance, and the Imperial Irrigation District served as the lead agency for CEQA compliance. The survey of the 60-mile-long 500-foot-wise corridor identified 20 previously located sites and 170 new sites including prehistoric flaking stations, lithic scatters, trails, rock rings, pottery scatters, and rock shelters, and historic trash dumps, military encampments, building foundations, cairns, and survey markers. Dr. Baksh also managed the project's Native American consultation.

Sabre Springs *(Parsons Brinckerhoff).*
Tierra conducted a cultural resource study for the proposed Sabre Springs Project adjacent to Interstate 15 and Ted Williams Parkway in the community of Sabre Springs. The project includes the construction of a Transit Center and access road on a 6.2-acre property. The environmental review was conducted in accordance with the California Environmental Quality Act (CEQA) and the City of San Diego Land Development Code. The Metropolitan Transit Development Board (MTDB) will serve as lead agency for CEQA compliance, and Caltrans served as agent for the Federal Highway Administration (FHA) and federal review.

Carroll Canyon *(Parsons Brinckerhoff).*
Tierra conducted several cultural resource studies for the proposed Carroll Canyon Road Extension Project in the area of Interstate 805. These studies have included general cultural surveys, archaeological testing and historic evaluations, and Native American consultation. The City of San Diego has served as the lead agency for CEQA review and Caltrans has served as the lead agency for NEPA review and compliance with the National Historic Preservation Act.

Black Mountain Pipeline *(City of San Diego).*
Dr. Baksh managed the archaeological studies associated with the construction of the Black Mountain Pipeline in the Mira Mesa and Penasquitos communities of San Diego. The project included several miles of pipeline constructed in Black Mountain Road and several adjacent streets. Tierra conducted construction monitoring of the project for a nearly two-year period.

Penaquitos Sewer *(BRG).*
Dr. Baksh conducted the archaeological studies associated with the Penasquitos trunk sewer for the City of San Diego. The project site consisted of a pipeline route of approximately two miles adjacent to Penasquitos Canyon. The study included a records search, Native American consultation, an archaeological survey, and an archaeological testing program.

City Trunk Sewers *(EarthTech).*
Dr. Baksh managed the archaeological studies for trunk sewers and access routes located in 18 canyons the City of San Diego. The goal of the project was to identify any cultural resources that could be impacted by routine maintenance and emergency repairs to aging sewer lines throughout the City. Records searches and archaeological surveys were conducted for all 18 canyons.

City Sewers As-Needed *(BRG).*
Dr. Baksh managed the archaeological studies for the City of San Diego on an As-Needed contract in 2004-2005. Most of the effort involved construction monitoring during the replacement of sewer lines in City streets.

City Water Group Jobs *(Arrieta, BRG, RBF).*
Dr. Baksh managed the archaeological studies for numerous City Water Group Jobs including 689, 744, 903, 904, and 905. Most of the effort associated with these projects involved construction monitoring during the replacement of water pipelines in existing City streets.

San Diego Water Repurification *(Montgomery Watson).*
Dr. Baksh prepared an archaeological feasibility study for the San Diego Water Repurification Project proposed by the City of San Diego Water Utilities Department. This project included analyses of records searches and existing archaeological studies, as well as field reconnaissance studies, for several alternative pipeline conveyance corridors and Advanced Water Treatment Facilities located between the North City Water Reclamation Plant and San Vicente Reservoir.

Mt. Israel Reservoir and Pipelines *(Olivenhain Municipal Water District and Bureau of Land Management).*
Dr. Baksh served as Senior Archaeologist for preparation of the cultural resources study for this proposed reservoir, flood control channel, and pipeline project in San Diego County. The cultural resource study also included record search analyses and intensive surveys of four alternative access roads. Located in an area traditionally utilized by the Luiseño Indians, this project included ethnohistoric research in addition to the archaeological survey.

SDCWA As-Needed Cultural Resources *(San Diego County Water Authority).*
Dr. Baksh served as the Project Ethnographer on the SDCWA As-Needed Cultural Resource Services contract. Task orders focused on Native American consultation and ethnographic research related to an archaeological test excavation and subsequent data recovery program at the Harris Site in association with Pipeline 5.

As Needed Archaeological Services For The MTDB Light Rail Project *(Metropolitan Transit Development Board).*
Dr. Baksh managed the As-Needed archaeological services for the San Diego Metropolitan Transit Development Board for construction of the Mission Valley Light Rail Project between Old Town and Fashion Valley. As-needed services included on-going construction monitoring, site testing, and data recovery activities. During monitoring, a buried prehistoric archaeological site was found at a location scheduled for immediate construction. In consultation with the Army Corps of Engineers and the City of San Diego, a testing project was implemented within days and the site was determined to be significant. Dr. Baksh managed the preparation of an evaluation and treatment plan (for the Heron site) and coordination with the ACOE and City. The plan was approved and Dr. Baksh managed the data recovery fieldwork, which was completed in less than one month after initial discovery of the site and just prior to crucial construction deadlines. He subsequently managed all phases of data analysis and preparation of the draft and final reports.

Clean Water Program/Native American Memorandum Of Understanding *(City of San Diego Metropolitan Waste Water Department).*
Dr. Baksh prepared a Memorandum of Understanding (MOU) between the Metropolitan Waste Water Department and Native American groups in San Diego County. The MOU specifies Native American involvement in archaeological investigations and the treatment of archaeological and human remains associated with construction of CWP facilities in San Diego County.

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Education:

2017-2019 — California State University of San Marcos
Bachelors of the Arts Indigenous Anthropology
Fall 2019

2014-2017 — Palomar Community College
Associates of the Arts Archaeology
Associates of the Arts Anthropology
Associates of Science Advanced Geographic Information Systems
Certificate in Archaeological Excavation
Certificate in Archaeological Surveyor and Lab Assistant

Research Interests:

Southwest Archaeology, San Diego Historical Archaeology, Mesoamerican Archaeology, Maya Archaeology, GIS spatial analysis, West African Archaeology

Archaeological Experience:

Current Employment (since 2017):
Archaeological Field Technician for Helix Environmental working with Cultural Resource Management. Responsibilities include construction monitoring of culturally sensitive areas throughout Southern California, cartography, archaeological surveying, and archaeological excavation.

2020 — Certified City of San Diego Archaeologist, CA. Certified by the city to have over 2 years of experience in cultural resource management.

2020 — (since January 2020)
Red Tail Environmental Archaeological Field Technician San Diego, CA. Working with Cultural Resource Management. Responsibilities include construction monitoring of culturally sensitive areas in La Jolla, CA.

2019 — (since 2019)
The Rio Frio Regional Archaeological Project (RiFRAP) Belize, Central America. Investigated the ritual caves and ceremonial

landmarks in the archaeologically unknown Rio Frio region, and the rock quarries in the adjacent Mountain Pine Ridge, Cayo District, Belize. Used photogrammetry and virtual tours, and traditional archaeological methods for understanding the region, rifrap.org.

2018	(since 2018) Recon Environmental Archaeological Field Technician San Diego, CA. The primary focus of this project was to recover cultural material belonging to the Luiseno Native Americans, which included ethically handling human remains in the field. Responsibilities included drawing stratigraphic profiles of units, artifact identification, and Munsell soil sampling.
2018	Lab Assistant California State University of San Marcos Anthropology Department San Marcos, CA. Responsibilities included creating 3D models of departmental skull cast collection, and curating the department library.
2018	GIS technician for Palomar College Archaeological Department. The primary focus of this project was to update the Archaeological database from excavations done between 2010 and 2015 at the Los Peñasquitos Ranch House in preparation for GIS spatial analysis. Other responsibilities included creating an accurate database, collecting GPS data, developing to scale basemaps of archaeological site, and creating statistical models for future data analysis using ArcMap.
2015-2017	Advanced Field Archaeologist for Palomar Archaeology field school at Los Peñasquitos Ranch House. This job consisted of teaching basic skills to students learning archaeological excavation, assisting the professors of Archaeology with different meta-analysis of the site, and establishing new methods to ensure efficient data collection in the future.
2015-2016	Assistant Field Archaeologist for a Togolese Archaeological Project directed by Dr. Philip De Barros. Responsibilities included mapping, GPS acquisition, survey, surface collections, excavation, ethnographic data collection, laboratory analysis, and artifact illustration.
2014-2015	Archaeological Survey Assistant for Palomar Archaeology. Responsibilities included map-making using a total station, GPS acquisition, surface collection, archaeological survey, and site illustration at Cuyamaca Rancho State Park.

Presentations:

Berdeja, Andres 2019	"The Significance of Jute in Maya Ritual Cave Settings in thc Rio Frio Region, Cayo District Belize." Paper presented at the 2019 Southern California Mesoamerica Network Conference: New Directions in Mesoamerican Research, University of Southern California, United States.
Berdeja, Andres 2018	"Artifact Spatial Distribution and Densities using ArcMap." Paper presented at the 52nd annual meeting of the Society for California Archaeology, San Diego, United States.

Positions Held:

2018-2019	Secretary of California State University of San Marcos Anthropology Club

Group Affiliations:

2017-Present	Society for California Archaeology
2017-Present	San Diego County Archaeological Society

Languages:

Spanish: conversational, reading
French: basic understanding

Community Service:

2016-Present	Volunteer soccer coach at the Oceanside Breakers Soccer Club
2019	Volunteer at CSUSM SuperSTEM Saturday
2015-2018	Volunteer at Arch in the Park at Rancho de Los Peñasquitos
2014-2016	Community High School outreach for graduating seniors

Other Employment:

2016	Kitchen supervisor at Firehouse Subs Oceanside, CA
2013-2014	Front of the house supervisor at Pei Wei Asian Kitchen Carlsbad, CA
2009-2012	Soccer Referee for CalSouth Official Youth and Adult State Soccer Association for Southern California

References:

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Dominique Diaz de Leon
Archaeologist
Tierra Environmental Services

Education

B.S., Cultural Anthropology, University of California Santa Barbara, United States

Professional Experience

Tierra Environmental Services (2022-Present): Field Archaeologist within Cultural Resources Management. Responsibilities include conducting cultural resources monitoring, cultural resources surveys, archaeological testing and data recovery, cataloging, record searches, cultural resources assessment and monitoring report writing, coordinating with Native American Monitors, mapping of cultural features, and managing projects.

HELIX Environmental Planning (2015-2022): Field Archaeologist within Cultural Resources Management. Responsibilities include conducting cultural resources monitoring, cultural resources surveys, archaeological testing and data recovery, cataloging, record searches, cultural resources assessment and monitoring report writing, coordinating with Native American Monitors, and mapping of cultural features.

El Vallecito (2015-2016): Mapped cultural features, translated research paper from English to Spanish, and aided in recording solar events.

Laguna Mountain Environmental Planning Inc. (2010-2011): Participated as an intern. Responsibilities included lab work, archaeological testing and data recovery.

Qualifications

Ms. Diaz de Leon serves as a field archaeologist and has conducted cultural resources monitoring, cultural resources surveys, archaeological testing, cataloging, record searches, mapping of cultural features, and has authored and co-authored many technical reports in formats required by City, State and Federal agencies. Project types on which she has worked throughout southern California include residential and commercial developments, solar sites, road widening, telecom tower and conduit installation, MTS roadwork, and utilities undergrounding. She has experience with international projects, working in La Rumorosa, B.C., Mexico on an archaeo-astronomical project in the archaeological site of El Vallecito; the project involved mapping and observation, as well as recording of solar events. She has shown an ability to effectively coordinate and communicate in a work environment and has good working relationships with Native American monitors, construction crews, and supervisors.

Notable Projects

Assessment which addressed fuel reduction plans for the 16,512-acre Reservation.

KRE-02 Otay Crossings Commerce Park EIR (2017 - 2019). Staff Archaeologist for a cultural resources program including testing, data recovery for a 311.5-acre project in the County of San Diego. Lead archaeologist during monitoring activities and co-authored the monitoring report. Work performed for Kearny PCCP Otay 311, LLC, with County of San Diego as the lead agency.

ESC-26 Emergency Storage Pond Project (2018 - 2018). Staff Archaeologist for a cultural resources testing program in conjunction with the Escondido Recycled Water Distribution System - Phase 1. Two cultural resources sites that could not be avoided through project redesign were evaluated for significance. Documented bedrock milling features, mapped features and surface artifacts, and excavated a series of shovel test pits at each site. Cataloged and analyzed cultural material recovered. The project is located in an area that is sensitive to both the Kumeyaay and Luiseño people, requiring close coordination with Native American monitors from both groups. Work performed for the City of Escondido.

IPQ-25 Bouquet Canyon Road Project (2018 - 2018). Staff Archaeologist for a proposed 85-acre private residential development in the Saugus Community of Santa Clarita. Completed an archaeological records search, requested a Sacred Lands File search, conducted pedestrian survey, and prepared portions of the technical report. Work performed for Integral Communities.

Other Projects

CSE-07 Brown Field and Montgomery Field Airport Master Plans (2017 - 2017). Staff Archaeologist for an environmental baseline study for cultural resources within City of San Diego's Brown Field Municipal Airport and Montgomery-Gibbs executive airports. Conducted a literature review and prepared a summary of existing archival data to document baseline cultural resources conditions at each airport. Prepared documentation for inclusion in the Baseline Study Report for the proposed Airport Master Plan study. Work performed as a subconsultant to C&S Companies, with the City of San Diego as the lead agency.

ASE-07 Leonis Boulevard Initial Study/Mitigated Negative Declaration (2018 - 2018). Staff Archaeologist for development of a 6,268-square foot food mart/quick service restaurant with a drive-through and a gas station in the City of Vernon. Completed a records search and literature review, requested Sacred Lands File search, completed a pedestrian survey, and prepared portions of a technical report to summarize the results. Work performed for A&S Engineering under review by the City of Vernon.

BRU-01 Baker Dental Office at 26900 Newport Road (2018 - 2018). Staff Archaeologist for the construction of a three -story dental professional office in the City of Menifee, Riverside County, California. Conducted a record search and co-authored the cultural report. Work performed for Dr. Bruce Baker and cultural report submitted to the City of Menifee Community Development Department.

CAH-01 The Enclave at Delpy's Corner Project (2018 - 2018). Staff Archaeologist for the development of a 16-acre property for a residential complex. Conducted archaeological monitoring during ground disturbances and assisted with completion of a data recovery

Assessment which addressed fuel reduction plans for the 16,512-acre Reservation.

program for a prehistoric site discovered on the property. Work performed for CalAtlantic Homes.

COV-05.08 Cultural Resources Study - P16-0310 Pheasant Hill MND (2017 - 2017). Served as a field archaeologist for testing/assessment of a historic archaeological site in conjunction with a proposed residential development in the City of Vista in northern San Diego County. Worked with crew chief and backhoe operator on mechanical trenches, screening soil to collect cultural material. Work performed for the City of Vista.

COV-05.14 Sprouts Cultural Report Project (2018 - 2018). Staff Archaeologist for construction of a 26,616-square-foot masonry ground-up building, including on-site parking spaces, wet and dry utilities, energy-efficient lighting, and landscaping. Prepared a records search and historical background research for the project. The results of the survey were positive, and a historical irrigation ditch was identified and documented. Work performed for the City of Vista.

CSD-06.06 Sycamore Canyon/Goodan Ranch Surveys (2019 - 2019). Staff Archaeologist for management of the Southern Parcel addition to the Preserve in accordance with a revised Preserve Resource Management Plan (RMP), including Area-Specific Management Directives (ASMDs). Completed a records search at the South Coastal Information Center and summarized the results for inclusion in the project technical report. Work performed for the County of San Diego.

DEA-09 Lake Elsinore Honda (Archaeological Services) (2018 - 2018). Staff Archaeologist for a cultural resources survey of a proposed auto dealership project in the City of Lake Elsinore. Completed background research and field survey. Work performed for David Evans Associates, with the City of Lake Elsinore as the lead agency.

ELA-01 Ocean View Hills 7-Eleven (2018 - 2019). Staff Archaeologist for development of an approximately 17.7-acre undeveloped lot with a 2,940 square-foot convenience market and gas station. Completed a records search at the South Coastal Information Center and prepared a written summary of the results for inclusion in the project technical report. Work performed for Elliot Megdal & Associates.

EVM-01 EVMWD Near Term Water Supply Program, On-call Professional Environmental Services (2017 - 2019). Staff Archaeologist for a cultural resources survey of the proposed Diamond Regional Lift Station project in the City of Lake Elsinore, located at the confluence of the San Jacinto River at the eastern shoreline of Lake Elsinore. Completed background research, field survey, and site record updates. Work performed in conjunction with Pechanga Cultural Resources related to Native American concerns and development of mitigation measures for the project. Work performed for Elsinore Valley Municipal Water District (EVMWD).

GHD-03 Kelly Drive and Park Drive Road Diet and Multi-Use Trail Project (2017 - 2018). Staff Archaeologist for the Multi-Use Trail project that proposes to create a balanced

Assessment which addressed fuel reduction plans for the 16,512-acre Reservation.

multi-modal transportation network, providing trail linkage from El Camino Real to Agua Hedionda Lagoon in coordination with the City of Carlsbad Trails system. Duties included contributing to the preparation of the survey and assessment report. Work performed for GHD, Inc., with City of Carlsbad as the lead agency.

HAA-02 Buena Sanitation District Green Oak Sewer Replacement Project (2016 - 2016). Served as a field archaeologist for testing of a known archaeological site in conjunction with a sewer replacement project for the City of Vista/Buena Sanitation District. Conducted excavation of shovel test pits and associated field notes.

JTB-03 I-215/Alessandro Boulevard Commercial Development (Cultural) (2018 - 2018). Staff Archaeologist for a Pre-Construction Notice (PCN) for a Nationwide Permit (NWP) 39 (Commercial and Institutional Developments) authorization from the U.S. Army Corps of Engineers (USACE) for the proposed I-215/Alessandro Boulevard Commercial Development Project. Prepared a records search update at the Eastern Information Center (EIC) and summarized the results in the technical report prepared by HELIX. Work performed for Alessandro Service Station, LP

KAB-266 Alliant University Project (2018 - 2019). Staff Archaeologist for a residential development project in the City of San Diego. Conducted portions of a due diligence study for the property, which included completion of a records search and a Sacred Lands File search, review of historic aerial images and topographic maps of the project, and field survey with a Native American monitor. Work performed for KB Home Coastal.

OIA-01 CEQA/NEPA Support for Ontario International Airport (2018 - 2019). Staff Archaeologist for the construction and operation of an air cargo facility and parallel taxi lane (project) in the northwest quadrant of Ontario International Airport (ONT). Completed a records search for the project at the Eastern Information Center. Work performed for C&S Engineers.

OMS-01 Old Mission San Luis Rey Cemetery Expansion Project (2017 - 2017). Archaeological Monitor for the expansion of the cemetery at Old Mission San Luis Rey, an area of sensitivity in terms of archaeological, historic, and Native American cultural resources. Worked performed for Old Mission San Luis Rey, with the City of Oceanside as the lead agency.

SDD-24.35.1 El Cuervo Del Sur Phase II Mitigation Support, July 2017 - June 30, 2018 (2018 - 2018). Staff Archaeologist for a cultural resources study for the El Cuervo Del Sur restoration site conducted as part of HELIX's as-needed contract with the City of San Diego, Transportation & Storm Water Department, the project proposed the creation of
Assessmen[illegible] background research,

reviewing previous cultural resource surveys, and preparing portions of the technical report. Work performed for the City of San Diego Transportation & Storm Water Department.

SDD-24.46 Nester Creek Channel Maintenance MMP, Map 134 (2018 - 2018). Staff Archaeologist for Hollister Quarry Mitigation Site, which was proposed to offset impacts resulting from channel maintenance activities within and adjacent to the Otay watershed by the City of San Diego Transportation & Storm Water Department's Master Storm Water Maintenance Program. Activities included conducting an intensive pedestrian survey, coordination with a Native American monitor, and assisting with preparation of the technical report. Work performed for the City of San Diego Transportation & Storm Water Department.

TCI-53 Arbol- Verizon site (2018 - 2018). Archaeological Monitor for construction of a cellular facility in Thousand Palms. Prepared a letter report to summarize the daily fieldwork and the results of a negative monitoring program. Work performed for Terracon.

TWG-01 Alta Vista Drive Project (PC2- 125) (2018 - 2018). Staff Archaeologist for construction of a residential development in Vista. Completed a records search update, Sacred Lands File search, a review of historic aerial photographs and maps, and a negative pedestrian survey. Work performed for Henderson Land Company under review by the City of Vista.

Assessment which addressed fuel reduction plans for the 16,512-acre Reservation.

KYLE STANKOWSKI
Archaeologist
Tierra Environmental Services

Education

B.S., Human Geography, University of Leicester, England
Associates Degree, Social Studies, University of East Anglia, England

Professional Experience

December 2010 - Current Project Archaeologist, Tierra Environmental Services, Inc.

Qualifications

Mr. Stankowski has ten years of experience in cultural resources management in southern California. Mr. Stankowski has been involved in innumerous archaeological surveys for a number of large scale energy installations, infrastructure, entertainment and residential development projects, and has authored dozens of reports following formats and guidelines set by local, state, and federal agencies. He has also served as an environmental planner for five years and has been involved in the preparation of a number of approved Environmental Assessments (EAs) and Environmental Impact Reports (EIRs), as well as several Tribal Environmental Impact Reports (TEIRs) which conformed to both state and federal guidelines.

Notable Projects

City As-Needed Cultural Monitoring
Mr. Stankowski has currently served for more than three years as a cultural monitor for the City of San Diego's as-needed utility undergrounding projects.

Victorville Residential Care Facility Testing
Mr. Stankowski served as Field Director in the archaeological testing of a previously-recorded 14-acre site located in Victorville, California in San Bernardino County.

Morongo Casino Expansion Project Initial Study
Mr. Stankowski served as Project Archaeologist and Environmental Planner on the proposed Morongo Casino Resort Spa Expansion Project in Riverside County.

HUD, HIP, and BIA-Funded EAs
Mr. Stankowski conducted the archaeological work, and prepared several EAs for HUD-funded proposals for developments proposed to be located on a number of Indian Reservations in southern California including Augustine, Cabazon, Campo, Los Coyotes, San Pasqual, and Santa Ysabel.

Naval Weapons Station Seal Beach Monitoring
Mr. Stankowski authored the Cultural Resources Mitigation Monitoring Report, which was approved by the US Navy, and subsequently participated in archaeological construction monitoring of a previously-recorded site in Orange County.

Pauma Off-Reservation Tribal Environmental Impact Report
Mr. Stankowski served as Project Archaeologist and Environmental Planner on the proposed Pauma Casino Expansion Project in San Diego County.

El Cuervo Adobe
Mr. Stankowski served as crew chief for a testing project for the City of San Diego involving the El Cuervo Adobe Ruins, Los Penasquitos Canyon. Mr. Stankowski scheduled crew, excavated four 1 meter x 1 meter test units, managed data collection and conducted laboratory work. Mr. Stankowski also served as co-author of the testing report.

Lake Arrowhead Taco Bell
Mr. Stankowski conducted archival research, served as a graphic artist and supporting author of the archaeological report for the commercial development of a lot in Lake Arrowhead, San Bernardino County.

Lakeview Mutual Water Company System Upgrade
Mr. Stankowski served as a graphic artist, consultant and assisted in the preparation of site forms and an archaeological survey report for improvements to potable water systems in the community of Weldon, Kern County.

Millards Road Property Assessment
Mr. Stankowski conducted archival research, served as project archaeologist and authored the archaeological report for the cultural assessment of a 32-acre property, located in Poway, San Diego County.

"Arms & the Dudes" Film Set
Mr. Stankowski served as a field technician for a cultural resources investigation in support of the construction, installation and decommission of a temporary film set and associated areas in Imperial County.

Jurupa Commercial Development
Mr. Stankowski conducted archival research, served as a graphic artist and supporting author of the archaeological report for the commercial development of two lots in Riverside County.

Big Pine Travel & Gaming Facility
Mr. Stankowski served as a consultant and assisted in the preparation of an Environmental Assessment for the development of a travel and gaming plaza for the Big Pine Paiute Tribe in Owens Valley.

Chandi Commercial Park
Mr. Stankowski conducted archival research, served as field technician, and authored the report for the survey of a 21-acre lot located in Coachella Valley.

Ramona Fee-To-Trust
Mr. Stankowski conducted archival research and served as field technician for the survey of ten parcels totaling 80-acres for the Ramona Band of Cahuilla Indians, located in Anza, Riverside County. Mr. Stankowski also served as graphic artist, co-authored the archaeological survey report, assisted in the completion of site forms and served as supporting author for the Environmental Assessment.

Pechanga Pu'eska Mountain
Mr. Stankowski conducted archival research and served as field technician for the programmatic study of Pu'eska Mountain for the Pechanga Indian Tribe, located in Riverside County.

El Camino Real Bridge Widening Project
Mr. Stankowski served as a graphic artist and supporting author of the archaeological report for improvements to a segment of the El Camino Real bridge in San Diego County.

Descanso Water
Mr. Stankowski served as a graphic artist and supporting author of the archaeological report and Environmental Assessment for the upgrade of potable water systems in central San Diego County.

Los Coyotes Powerline
Mr. Stankowski served as a field technician for the installation of a utility line on the Los Coyotes Band of Cahuilla and Cupeño Indians Reservation.

Torres Martinez Compost
Mr. Stankowski served as a consultant to the Torres Martinez Desert Cahuilla for the development of a composting facility on 60 acres of vacant Tribal Trust Land, located in Riverside County. Mr. Stankowski also conducted archival research, served as archaeological field crew and completed associated site forms.

Mooretown Rancheria
Mr. Stankowski conducted archival research, served as graphic artist and supporting author of the cultural resources survey report for the programmatic study of the Mooretown Rancheria located in Butte County.

Little Baldy
Mr. Stankowski served as a graphic artist, consultant and assisted in the preparation of site forms and an archaeological survey report for improvements to potable water systems in the community of Weldon, Kern County.

Torres Martinez Agricultural Lease
Mr. Stankowski served as a consultant to the Torres Martinez Desert Cahuilla for the agricultural lease of 40 acres of vacant Tribal Trust Land, located in Riverside County. Mr. Stankowski also served as a graphic artist for the Environmental Assessment which addressed.

Campo Homes
Mr. Stankowski served as archaeological crew for a survey of six one-acre parcels of land for prospective new homes of residents in the Campo Indian Reservation. Mr. Stankowski assisted in the preparation of the survey report.

385-acre Fee to Trust Transfer Property
Mr. Stankowski served as field crew for the archaeological survey for the Barona Band of Mission Indians' proposal to transfer 385 acres from simple fee status into Federal trust status. Mr. Stankowski conducted archival research, archaeological survey, and assisted the production of the technical report.

127-acre Fee to Trust Transfer Property
Mr. Stankowski served as field crew for the archaeological survey for the Barona Band of Mission Indians' proposal to transfer 127 acres from simple fee status into Federal trust status. Mr. Stankowski conducted archival research, archaeological survey, and assisted the production of the technical report.

Campo Hazardous Fuel Reduction
Mr. Stankowski served as a consultant to the Campo Band of Mission Indians' hazardous fuel reduction project. Mr. Stankowski also served as a technical writer and graphic artist for the Environmental Assessment which addressed fuel reduction plans for the 16,512-acre Reservation.

Golden Acorn Wind Turbine
Mr. Stankowski served as a consultant to the Campo Band of Mission Indians' Golden Acorn Casino Wind Turbine project. Mr. Stankowski also served as a technical writer and graphic artist for the Environmental Assessment which addressed the single turbine and associated electrical transmission lines.

Two Fee to Trust Transfer Properties
Mr. Stankowski served as field crew for the archaeological survey for the Barona Band of Mission Indians' proposal to transfer 93 acres from simple fee status into Federal trust status. Mr. Stankowski conducted archival research, archaeological survey, and assisted the production of the technical report.

Santa Ysabel Homes
Mr. Stankowski served as survey crew for seven parcels of land proposed for the development of single family houses on the Santa Ysabel Indian Reservation. Each parcel surveyed consisted of a one-acre allotment for the housing. Mr. Stankowski assisted in the completion of the report and site forms.

San Elijo Pump Station
Mr. Stankowski served as a graphic artist for the development of a potable water pump station, located in San Diego County.

Ocotillo Express Wind Energy Project – Geotechnical Construction Monitoring Effort
Following the completion of the archaeological survey effort, Mr. Stankowski oversaw the monitoring effort. Additionally, Mr. Stankowski participated in the coordination and preparation of the construction monitoring effort. Per the request of the BLM, Mr. Stankowski participated in a Tribal Participation Plan to convey details of the proposed monitoring efforts by the participating Native American Tribes, Kumeyaay and Colorado River Tribes. Mr. Stankowski assisted with the coordination of the monitoring crews and assist with the monitoring reports.

Ocotillo Express Wind Energy Project - Archaeological Survey
Mr. Stankowski served as associate archaeologist for the Ocotillo Wind Express Project. The project consisted of a Class II and Class III survey totaling 12,436 acres for the proposed installation of 112 wind turbines in Imperial County, CA. Mr. Stankowski participated in the coordination of field crews, both field technicians and Native American monitors, and served as liaison between the office and the field. When needed, Mr. Stankowski accompanied archaeologists during site visits and maintenance of environmentally sensitive areas. Mr. Stankowski assisted with the post-survey analysis of the data and the authorization of the technical report, as well as key aspects of the post-construction management and coordination.

Sunrise Powerlink Final Environmentally Superior Southern Route

Mr. Stankowski served as supporting Native American Coordinator for the construction monitoring effort for the Sunrise Powerlink; an 118-mile transmission line from San Diego Gas & Electric (SDG&E) Imperial Valley Substation near El Centro, Imperial Valley, to SDG&E's Sycamore Canyon Substation in coastal San Diego, California. Mr. Stankowski coordinated and scheduled monitors from the Kumeyaay Indian Tribes and the Cocopah Indian Tribe. Mr. Stankowski discussed with and matched cultural monitors with construction activities in potentially culturally sensitive locations based on proximity and/or Tribal interest.

Padre Dam

Mr. Stankowski served as archaeological crew for the Padre Dam monitoring project, located in Alpine, San Diego County. Mr. Stankowski assisted in data recovery, testing, monitoring, collections and curation of recovered resources.

Appendix 7

NOISE ELEMENT

Prepared by:

Planning & Development Services
County of Imperial
801 Main Street
El Centro, California 92243-2875

JIM MINNICK
Planning Director

Approved by:

Board of Supervisors
October 6, 2015

NOISE ELEMENT
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TRACKING SHEET

ACTION	DATE	MO #
Adopted by Board of Supervisors	November 9, 1993	18
Revisions adopted by Board of Supervisors	October 6, 2015	18b

IMPERIAL COUNTY GENERAL PLAN
NOISE ELEMENT

I. INTRODUCTION

A. Preface

The Noise Element of the General Plan is a mandatory component of all general plans pursuant to the State Government Code, Section 65302. The State guidelines, Section 65302(f), specify the content of the Noise Element, which includes the requirement to analyze, to the extent practicable, the current and projected noise levels of:

- Highways and freeways;
- Primary arterials and major local streets;
- Passenger and freight on-line railroad operations and ground rapid transit systems;
- Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation;
- Local industrial plants, including, but not limited to railroad classification yards; and
- Other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

The Noise Element must delineate noise contours for the above noise sources, which shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise. The Noise Element must identify and appraise noise problems in the planning area and provide policy programs to avoid potential noise problems. Policies established in the Noise Element is applicable to lands that are owned or zoned by the County; lands regulated by the State or Federal government are preempted from local land use policy.

B. Purpose of the Noise Element

Noise is generally defined as unwanted sound. Exposure to noise can result in interference with speech, distractions at home and at work, disturbance of rest and sleep, and the disruption of various recreational pursuits. Long-term exposure to high noise levels can affect psychological and physiological health. The Noise Element of the Imperial County General Plan provides a program for incorporating noise issues into the land use planning process, with a goal of minimizing adverse noise impacts to receptors which are sensitive to noise.

The Noise Element identifies existing and future noise sources, and defines noise-sensitive land uses. The element establishes goals, objectives and procedures to protect the public from noise intrusion. Implementation of these guidelines and procedures will promote the development of noise sensitive land uses outside of noise impact zones, and discourage the development of noise generating activities near noise-sensitive land uses.

The description of noise requires the use of terms which may not be familiar to most readers of this General Plan. Terms are described briefly in the text. Appendix A is a glossary of terms to assist the reader of the Noise Element.

C. Noise Measurement

Noise is a form of energy. A standard unit of measure of the noise level, or sound pressure level, is the decibel (dB). Sound is also described by frequency, or pitch, and comprehensive measurements describe the sound level for each specified frequency range. For the assessment of noise levels to a human receptor, the frequency range measurements are combined into a single value, the "A-weighted" decibel, often written dB(A) or dBA. A-weighting gives values to the individual frequencies which correspond to the human hearing spectrum. In this noise element, the use of the term dB means the A-weighted decibel. Table 1 provides examples of various sound levels.

Noise is measured with a sound level meter. This instrument includes a microphone, amplifiers, frequency weighting circuitry, readout and, usually, a means for recording and averaging data. Sound level meters should meet the specifications of the American National Standards Institute, ANSI S1-4, 1983 or later, for Type I or Type II instruments.

Average Noise Levels. The most commonly used short-term average is L_{eq}, the equivalent noise level. When L_{eq} is used, a time for averaging may be stated, such as 15 minutes, 1 hour, 8 hours or 24 hours. If no time is stated, a one hour average is assumed. L_{eq} is usually used in the description of noise near a point source or group of sources, such as a tractor or a construction site. Policies and ordinances which regulate noise at the source are usually stated in terms of L_{eq}.

Community Noise Levels. Community noise is a term used to describe the outdoor noise environment in the vicinity of inhabited areas. Community noise is generally a combination of noise from varied and widespread sources, such as highways and railroads. Community noise usually varies in time, with the cyclic pace of noise-making activities. Therefore, an averaging of the noise level over a period of time is necessary to describe community noise levels. Further, the sensitivity to noise in the community varies during the day. People are less sensitive to noise when they are engaged in activities which in themselves make noise, such as recreation, than when they are engaged in quiet activities, such as sleeping.

The long term averages used for the assessment of community noise are the Community Noise Equivalent Level, CNEL, and the Day-Night Level, L_{dn} or DNL.

These averages weight the noise levels over a 24-hour period to account for increased human sensitivity during the evening and night

TABLE 1
TYPICAL SOUND LEVELS

Sound Level (dB)	Community/Outdoor	Industry/Home Indoor	Impression/Effect
130			
	Jet takeoff (200')		Threshold of Pain (130-140 dB)
120			
110	Chainsaw (2')	Discotheque	
100	Pile driver (50')		
90	Power mower Heavy truck (50')	Boiler room	Hearing damage (8 hour exposure)
80	Concrete mixer (50')	Garbage disposal	Loud/annoying
70	Freeway (100')	Noisy restaurant	Shouting required at 3 feet
60	Air conditioner unit	Department store	Loud speech required at 3 feet
50	Light auto traffic (100')	Quiet office	Normal speech at 3 feet Disturbs sleep
40	Bird calls	Library	Quite
	Soft whisper (6')		
30		Quiet bedroom	
20	North rim of Grand Canyon	Recording studio	
10			Threshold of hearing

time periods. The difference between CNEL and L_{dn} is that CNEL considers the 24-hour day divided into three periods, while L_{dn} uses two periods. The two measurements are very close, and are generally accepted as equivalent in community noise studies. L_{dn} is the measure used by the U.S. Environmental Protection Agency (EPA) for a community noise descriptor, while CNEL is commonly used in California. The Imperial County General Plan Noise Element uses CNEL.

II. EXISTING CONDITIONS AND TRENDS

A. Preface

Many activities which create objectionable noise levels in Imperial County, such as industrial operations and rail switching yards, are located within cities which are not a part of the County General. The highest traffic volumes, which are major noise sources, are within the cities of El Centro and Calexico. This section addresses only noise sources which affect unincorporated areas of the County. Information for this analysis was compiled from documents and reports on file at the County Planning Department.

B. Noise Sources

The principal noise sources in Imperial County are the transportation sources, aircraft, rail lines, and motor vehicle; the industrial sources, which include rail switching yards, utilities, and manufacturing facilities; and agricultural operations. In rural areas of the County, mining and off-road vehicle activity also create significant noise, but generally in areas without noise sensitive receptors.

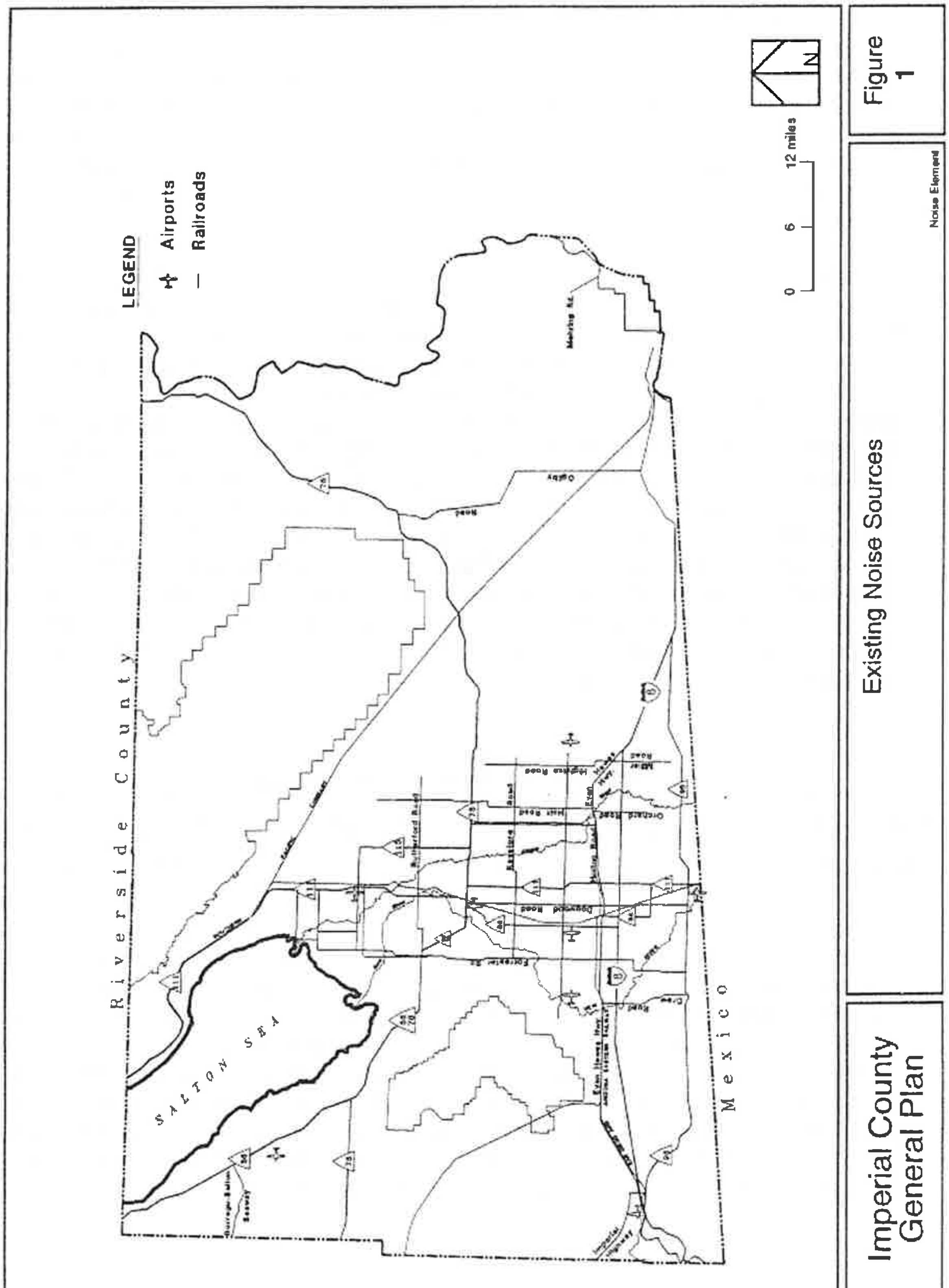
1. Transportation Sources

a. Aircraft Noise

Aircraft noise which may affect sensitive land uses occurs in the vicinity of seven airports in the County: Imperial County, Brawley Municipal, Calexico International, Calipatria Municipal, Holtville, Salton Sea, and the Naval Air Facility (NAF) El Centro which is located north of the townsite of Seeley. The locations of these airports are shown in Figure 1. The noise levels and associated areas of noise impact are quantified in noise contour maps which usually are products of FAA-mandated noise surveys or Airport Land Use Plans. Appendix B contains the most recent existing noise contour maps for Brawley Municipal Airport and NAF El Centro airports.

Future airport noise levels for Brawley Municipal, Calexico International, Calipatria Municipal, and Imperial County airports, and NAF El Centro are shown on contour maps in Appendix B. These maps are taken from the *Airport Land Use Compatibility Plan, Imperial County Airports* (ALUCP 1991). The Airport Land Use Compatibility Plan indicates that future noise contours for the Holtville and Salton Sea airports have not been determined. At the present time, Holtville Airport has no facilities other than its large runway, and its use is limited to irregular operations from military facilities at El Centro and Yuma. The future use of the airport is uncertain (ALUCP 1991). Current airport activity at Salton Sea Airport is negligible. An expansion plan for the airport exists; implementation in the foreseeable future is unlikely (ALUCP 1991). Aircraft noises occur as part of agricultural operations, where aircraft are used for crop spraying operations

Figure 1 - Existing Noise Sources



b. Railroad Noise

The Southern Pacific Railway is the primary source of railroad transportation noise in the County. The main line right-of-way runs from the Riverside County border, just east of the Salton Sea, southeast to Niland. From Niland, the main line continues southeast to Yuma, Arizona; a branch runs south to Calipatria, Brawley, Imperial, El Centro and Calexico. A branch on this line runs east from El Centro along Evan Hewes Highway to Holtville. This branch is used primarily for agricultural transport, such as sugar beets from fields west of Holtville. The railroad lines are shown in Figure 1.

Two other railways, which are located west of Seeley, are the U.S. Gypsum rail line to their mining site in the Fish Creek Mountains; and the San Diego and Eastern Railroad (S.D.& A.E.) from San Diego through the Jacumba Mountains. The U.S. Gypsum line passes through uninhabited areas, including a military bombing range and does not impact sensitive receivers. The S.D.& A.E. line has been non-operational east of Jacumba to Plaster City following Tropical Storm Kathleen in 1976 which destroyed tracks and bridges along much of its route.
Railroad noise on the Southern Pacific line, just north of the Riverside County border, was studied in 1990. A combination of measurements, operations data (from 1988) and modeling resulted in the data shown in Table 2. Operations data in 1992, for the main Southern Pacific line, are similar to that of 1988 (i.e., an average of about 40 trains per day), and Table 2 would apply to existing conditions. Railroad noise from the spur tracks would be much less. The branch to Imperial and Calexico averages four trains per day. The branch to Holtville averages four trains per week.

TABLE 2
EXISTING RAILROAD NOISE LEVELS

Distance (ft)	100	200	300	400	500	700	1,000	2,000	5,000
CNEL (dBA)	74	70	67	64	62	60	57	51	44

Two proposed projects could add spurs to the existing railway network. A proposed new international border crossing and bi-national industrial area east of Calexico could include a rail branchline and/or drill tracks and/or spurs. The route of the rail line could be east-west from Calexico or north-south from Holtville, dependent on availability of right-of-way and accompanying land use, environmental and economic considerations. A second proposed project is the Mesquite Landfill, which would require a spur near Glamis, running northwesterly for a distance of four to five miles. This spur would dead-end at the landfill, and be used exclusively for the transportation of solid waste.

c. Roadway Noise

Motor vehicle noise level information is obtained from measurements using a sound level meter, and is calculated using highway traffic volume, speed, and vehicle mix information. Figure 1 shows the location of existing principal roadways within Imperial County. The major east-west roadway in the county is Interstate 8 (I-8), which runs from Yuma, Arizona to San Diego County, through the city of El Centro.

State Route (SR) 98 parallels I-8 on the south to serve the city of Calexico and the community of Ocotillo. SR 78 parallels I-8 to the north, and serves the cities of Westmorland and Brawley, and continues northeast to the community of Palo Verde. The Evan Hewes Highway is Old Highway 80 which parallels I-8 on the north from Ocotillo to Seeley, El Centro, and Holtville, then back southeast to again join I-8.

SR 86 and SR 111 are the main north-south roadways. SR 86 runs from SR 111 north of Calexico, through Heber and the cities of El Centro, Imperial, Brawley and Westmorland and northward to eventually connect with Interstate 10 at Indio. It is a principal farm-to-market route for Imperial County agricultural products, and carries a high percentage of heavy trucks. SR 86 also carries heavy recreational traffic on weekends. SR 111 is located east of El Centro from Calexico to the cities of Brawley and Calipatria; and continues north along the east side of the Salton Sea past Niland and Bombay Beach to also connect with I-10 at Indio.

Other state roads include SR 115, which runs northwest from I-8 to Holtville, then north to Brawley and Calipatria; and SR 186, a short spur running south from the eastern end of I-8 to the international border.

Table 3 lists the interstate and state highways in Imperial County, and shows the vehicle volumes, mixes, and calculated noise levels. Traffic volumes are from the Circulation/Scenic Highway Element; vehicle mixes are from Caltrans 1990 data. Due to the relative low volumes on most of the roadways in the unincorporated area of the County, noise contours would not be distinguishable at a scale which could be included with this Noise Element. A large scale map (1"=2 miles) with noise contours has been provided and is on file at the County Planning Department. More detailed descriptions of the state highways and local roadways may be found in the Circulation/Scenic Highway Element of the General Plan.

A new state highway is planned for south central Imperial County. SR 7 will provide a north-south connection from SR98 to a planned border crossing and bi-national industrial area east of Calexico. SR 7 may continue north to connect with I-8. Improvements are planned to SR 86 which is expected to follow a more westerly alignment from south of Salton City to reconnect with existing SR 86 southwest of Brawley. Improvements to, and addition of non-State roads to the Imperial County roadway system are described in the Circulation Element.

TABLE 3
IMPERIAL COUNTY INTERSTATE AND STATE HIGHWAY TRAFFIC AND NOISE DATA (EXISTING CONDITIONS)

Road Segment	Traffic					Noise			
	Volume (thousands)	Speed (mph)	Vehicle Mix (percent)			Reference CNEL dB	Distance to ___ dB		
			Auto	Med	Heavy		70 feet	65 feet	60 feet
I-8									
w/o Ocotillo	10.7	65	84	4.8	11.2	76	180	565	1605
e/o Ocotillo	8.6	65	84	4.8	11.2	75	145	455	1355
w/o El Centro	10.9	65	87	4.0	9.0	75	170	525	1455
e/o El Centro	22.9	65	89	3.4	7.6	78	325	1005	2205
e/o 111	8.4	65	83	5.0	12.0	75	145	455	1355
w/o 115	6.5	65	81	4.8	14.2	74	125	380	1155
e/o 115	7.2	65	77	4.6	18.4	75	160	495	1405
e/o 98	8.7	65	80	4.4	15.6	75	170	530	1505
w/o 186	10.7	65	80	4.4	15.6	76	215	655	1705
e/o 186	14.0	65	80	4.4	15.6	77	275	855	2005
SR-78									
w/o 86	0.6	55	66	6.1	27.9	64	*	*	135
e/o 111S	3.5	55	70	2.1	27.9	72	80	240	775
e/o 115S	1.5	55	73	7.0	20.0	67	*	85	275
SR-86									
w/o 111	4.3	55	93	4.8	2.2	68	*	105	315
s/o 8	9.2	55	94	4.1	1.9	71	70	205	630
s/o 78E	13.5	55	90	4.8	5.2	74	130	385	1180
nw/o Brawley	5.3	55	78	6.8	15.2	72	85	245	780
s/o 78W	4.6	55	52	5.1	42.9	75	150	465	1380
n/o 78W	4.1	55	52	5.0	43.0	74	135	410	1225
SR-98									
e/o Ocotillo	1.8	55	89	4.6	6.4	65	*	55	175

TABLE 3
IMPERIAL COUNTY INTERSTATE AND STATE HIGHWAY TRAFFIC AND NOISE DATA
(EXISTING CONDITIONS)

Road Segment	Traffic					Noise			
	Volume (thousands)	Speed (mph)	Vehicle Mix (percent)			Reference CNEL dB	Distance to ___ dB		
			Auto	Med	Heavy		70 feet	65 feet	60 feet
w/o Drew	2.1	55	89	2.6	8.4	66	*	70	220
w/o 111	12.0	55	93	2.8	4.2	73	95	300	950
w/o 8	0.9	55	77	2.3	20.7	65	*	50	160
SR-111									
s/o 86W	25.0	55	92	4.4	3.6	76	205	635	1655
s/o 8	22.0	55	93	3.7	3.3	75	170	535	1505
n/o 8	9.5	55	87	5.9	7.1	73	100	310	980
s/o 78	6.9	55	84	7.2	8.8	72	80	240	775
n/o 78	7.1	55	82	7.5	10.5	73	90	285	900
s/o 115	7.1	55	79	7.5	13.5	73	100	210	980
n/o 115	5.6	55	82	7.5	10.5	72	70	225	700
s/o Riv. Cty.	3.5	55	71	12.2	16.8	71	60	190	600
SR-115									
n/o 8	2.1	55	63	9.3	27.7	70	49	155	485
s/o 78	2.7	55	68	7.9	24.1	70	55	175	560
n/o 78	1.3	55	18	19.7	62.3	71	60	185	590
SR-186	2.0	55	90	8.8	1.2	65	*	50	150

"*" indicates contour lies within the right-of-way
All calculations assume flat hard terrain with no obstructions; actual conditions

Table 4 shows the projected future noise for Interstate 8 and the state highways in Imperial County. The future volumes are from the Circulation/Scenic Highway Element; vehicle mix parameters are the same as those used for existing conditions. Roadway noise may increase 3 dB CNEL for many sections, and up to 6 dB CNEL for a few sections. Table 4 indicates that the 60 dB CNEL contour may move considerably farther from existing roadways than at present, thus exposing existing and potential sensitive receptors to greater noise levels.

TABLE 4 IMPERIAL COUNTY INTERSTATE AND STATE HIGHWAY TRAFFIC AND NOISE DATA (FUTURE/YEAR 2015 CONDITIONS)							
		Noise				Increases	
			Distance to __ dB				
Road Segment	Traffic Volume (thousands)	Referenc e CNEL dB	70 feet	65 feet	60 feet	CNEL dB	Distance to 60 CNEL feet
I-8							
w/o Ocotillo	26.1	79	440	1300	2600	3	995
e/o Ocotillo	18.3	78	310	970	2150	3	795
w/o El Centro	29.2	79	445	1310	2625	4	1170
e/o El Centro	50.4	81	705	1790	3230	3	1025
e/o 111	15.9	77	280	870	2020	2	665
w/o 115	12.7	77	240	755	1850	3	695
e/o 115	14.1	78	305	960	2120	3	715
e/o 98	13.9	77	275	865	2010	2	505
w/o 186	21.5	79	425	1255	2560	3	855
e/o 186	37.5	82	735	1840	3290	5	1285
SR-78							
w/o 86	1.6	69	*	114	362	5	227
e/o 111S	6.0	74	130	412	1230	2	455
e/o 115S	3.0	70	55	172	545	3	270
SR-86							
w/o 111	6.0	69	44	137	435	1	120
s/o 8	26.9	76	186	590	1600	5	970
s/o 78E	20.0	76	180	570	1560	2	380
nw/o Brawley	7.7	74	118	372	1145	2	365
s/o 78W	17.6	80	550	1520	2905	5	1525
n/o 78W	9.9	78	310	975	2160	3	755
SR-98							
e/o Ocotillo	6.1	71	59	187	590	6	415
w/o Drew	7.1	72	74	234	740	6	520
w/o 111	26.1	76	209	660	1710	3	760
w/o 8	1.1	66	*	61	193	1	33
SR-111							
s/o 86W	43.0	78	349	1075	2305	2	650
s/o 8	37.8	78	294	920	2095	3	590
n/o 8	16.3	75	168	532	1480	2	500

TABLE 4 IMPERIAL COUNTY INTERSTATE AND STATE HIGHWAY TRAFFIC AND NOISE DATA (FUTURE/YEAR 2015 CONDITIONS)							
		Noise				Increases	
			Distance to __ dB				
Road Segment	**Traffic Volume (thousands)**	**Reference CNEL dB**	**70 feet**	**65 feet**	**60 feet**	**CNEL dB**	**Distance to 60 CNEL feet**
s/o 78	11.9	74	138	438	1290	2	515
n/o 78	16.3	76	206	655	1685	3	785
s/o 115	17.0	77	246	780	1890	4	910
n/o 115	14.3	76	182	576	1565	4	865
s/o Riv. Cty.	6.7	74	116	369	1130	3	530
SR-115							
n/o 8	3.5	72	81	257	810	5	535
s/o 78	3.7	72	77	243	765	2	205
n/o 78	3.4	75	155	490	1400	4	810
SR-186	4.4	68	*	104	330	3	180

"*" indicates contour lies within the right-of-way.
All calculations assume flat hard terrain with no obstructions; actual conditions may reduce noise significantly.

2. Industrial Sources

Manufacturing and utility operations often emit noise which may impact sensitive receptors in the area of the plant. Existing major manufacturing sites within Imperial County are generally located away from concentrations of sensitive receptors. These include a gypsum plant in Plaster City, Holly Sugar and Calcot between Imperial and Brawley, and geothermal power plants in the southeast Salton Sea, Heber, and East Mesa areas. Additional geothermal plants are planned. Figure 1 includes the location of existing geothermal plants and areas where future plants may be located. More detailed descriptions of the geothermal plants may be found in theRenewable Energy and Transmission Element of the General Plan.

3. Agricultural Sources

The predominant land use in Imperial County is agriculture. Noise sources associated with agricultural operations include the field machinery, especially when diesel engine driven; heavy trucks, used for the delivery of supplies and the distribution of products; and aircraft, used for the spraying of crops.

4. Other Sources

Noise sources not included above which are likely to be included in planning analyses include: construction noise; noise from commercial activities, such as automotive and truck repair, kennels, and entertainment facilities; noise from building heating, ventilating, and air conditioning (HVAC) systems; and noise from recreational areas, including off-road vehicles.

Noise from residential stereos, tools, parties and pets can be a source of noise complaints. This type of noise is not addressed in planning activities, but in ordinances specifically for controlling nuisance noise or generally for maintaining the peace.

C. Sensitive Receptors

Sensitive noise receptors are, in general, areas of habitation where the intrusion of noise has the potential to impact adversely the occupancy, use or enjoyment of the environment. Sensitive receptors include, but are not limited to, residences, schools, hospitals, parks and office buildings.

Sensitive receptors may also be non-human species. Many riparian bird species are sensitive to excessive noise.

III. GOALS AND OBJECTIVES

A. Preface

The Noise Element of the General Plan serves as the primary policy statement by the Board of Supervisors for implementing policies to maintain and improve the noise environment in Imperial County. This section of the Noise Element presents Imperial County's Goals and Objectives relative to planning for the noise environment within the unincorporated areas of the County. They have been prepared in collaboration with the General Plan Ad-Hoc Advisory Committee appointed by the Board of Supervisors.

The Goals and Objectives, together with the Implementation Programs and Policies in Chapter IV, are the statements that shall provide direction for private development and industry as well as government actions and programs. Imperial County's Goals and Objectives are intended to serve as long-term principles and policy statements representing ideals which have been determined by the citizens as being desirable and deserving of community time and resources to achieve. These Goals and Objectives, therefore, are important guidelines for decision making relative to proposed projects and land use planning. It is recognized, however, that other social, economic, environmental, and legal considerations are involved in decisions relative to environmental protection and that these Goals and Objectives, and those of the other General Plan Elements, should be used as guidelines but not doctrines.

B. Goals and Objectives

Noise Environment

Goal 1: Provide an acceptable noise environment for existing and future residents in Imperial County.

> Objective 1.1 Adopt noise standards which protect sensitive noise receptors from adverse impact.
>
> Objective 1.2 Ensure that noise standards and policies are compatible with the standards and policies of other General Plan Elements and other County agencies.
>
> Objective 1.3 Control noise levels at the source where feasible.
>
> Objective 1.4 Coordinate with airport operators to ensure operations are in conformance with approved Airport Land Use Plans.

Objective 1.5 Identify sensitive receptors with noise environments which are less than acceptable, and evaluate measures to improve the noise environment.

Objective 1.6 Collect data for existing noise sources in the County in order to improve the data base and enhance the ability to evaluate proposed projects and land uses.

Project/Land Use Planning

Goal 2: Review proposed projects for noise impacts and require design which will provide acceptable indoor and outdoor noise environments.

Objective 2.1 Adopt criteria delineating projects which should be analyzed for noise impact to sensitive receptors

Objective 2.2 Provide acoustical analysis guidelines which minimize the burden on project proponents and project reviewers.

Objective 2.3 Work with project proponents to utilize site planning, architectural design, construction, and noise barriers to reduce noise impacts as projects are proposed.

Long Range Planning

Goal 3: Provide for environmental noise analysis inclusion in long range planning activities which affect the County.

Objective 3.1 Adopt procedures for the preparation of Specific Plans which include the requirement for a noise impact analysis.

Objective 3.2 Coordinate regularly with Caltrans to obtain information on trends and plans for roadway changes and improvements which would affect the noise environment.

C. Relationship to Other General Plan Elements

The Noise Element Policy Matrix (Table 5) identifies the relationship between the Noise Element Goals and Objectives to other Elements of the Imperial County General Plan. The Issue Area identifies the broader goals of the Element and the "Xs" identify that related objectives are contained in the corresponding Elements.

TABLE 5 NOISE ELEMENT POLICY MATRIX								
Issue Area	**Land Use**	**Housi ng**	**Circulati on**	**Seismic/ Public Safety**	**Agricultu ral**	**Open Space Conservat ion**	**Renewab le Energy**	**Wate r**
Noise Environment						X	X	
Land Use Planning	X		X				X	

IV. IMPLEMENTATION PROGRAMS AND POLICIES

A. Preface

The primary mechanism to implement the noise goals and objectives is to incorporate noise concerns into land use planning and the planning of noise-producing projects. Future noise/land use incompatibilities can be avoided or reduced by establishing criteria and standards for acceptable noise limits for various land uses throughout the County. It may not always be possible to avoid constructing noise sensitive developments in existing noisy areas. Therefore, this Element provides noise reduction strategies to be implemented in situations with potential noise/land use conflicts.

The first part of the implementation program identifies Noise Impact Zones for significant noise generators, where analysis of noise impacts must be performed. The standards to be applied in noise analyses and their evaluation are stated. Subsequent sections define programs for proposed projects, existing noise sources and noise reduction.

B. Noise Impact Zones

A Noise Impact Zone is an area that is likely to be exposed to significant noise. The County of Imperial defines a Noise Impact Zone as an area which may be exposed to noise greater than 60 dB CNEL or 75 dB L_{eq}(1). The purpose of the Noise Impact Zone is to define areas and properties where an acoustical analysis of a proposed project is required to demonstrate project compliance with land use compatibility requirements and other applicable environmental noise standards. For purposes of this Element, any property meeting one of the following criteria is defined as being in a Noise Impact Zone:

- Within the noise impact zone distances to classified roadways, as indicated in Table 6.

TABLE 6
ROADWAY NOISE IMPACT ZONES

Roadway Classification	Distance from Centerline - feet
Interstate	1,500
State Highway or Prime Arterial	1,100
Major Arterial	750
Secondary Arterial	450
Collector Street	150

- Within 750 feet of the centerline of any railroad.

- Within 1,000 feet of the boundary of any railroad switching yard.

- Within the existing or projected 60 dB CNEL contour of any airport, as shown in the Imperial County Airport Land Use Compatibility Plan or an approved airport master plan which supersedes the ALUCP. Note: Land use compatibility analysis, which may include an acoustical analysis, is required for projects proposed within the "airport vicinity" of each airport, as defined on the Compatibility Maps shown in the ALUCP. This may encompass a much larger area than the 60 dB CNEL contour.

- Within one-quarter mile (1,320 feet) of existing farmland which is in an agricultural zone.

C. Noise/Land Use Compatibility Standards

Land Use compatibility defines the acceptability of a land use in a specified noise environment. Table 7 provides the County of Imperial Noise/Land Use Compatibility Guidelines. When an acoustical analysis is performed, conformance of the proposed project with the Noise/Land Use Compatibility Guidelines will be used to evaluate potential noise impact and will provide criteria for environmental impact findings and conditions for project approval.

Table 8 provides the ALUCP Noise/Land Use Compatibility Criteria, which must be used to evaluate aircraft noise impacts. Noise standards associated with the construction and operation of geothermal power stations are included in Appendix B to the Renewable Energy and Transmission Element of the General Plan.

1. Interior Noise Standards

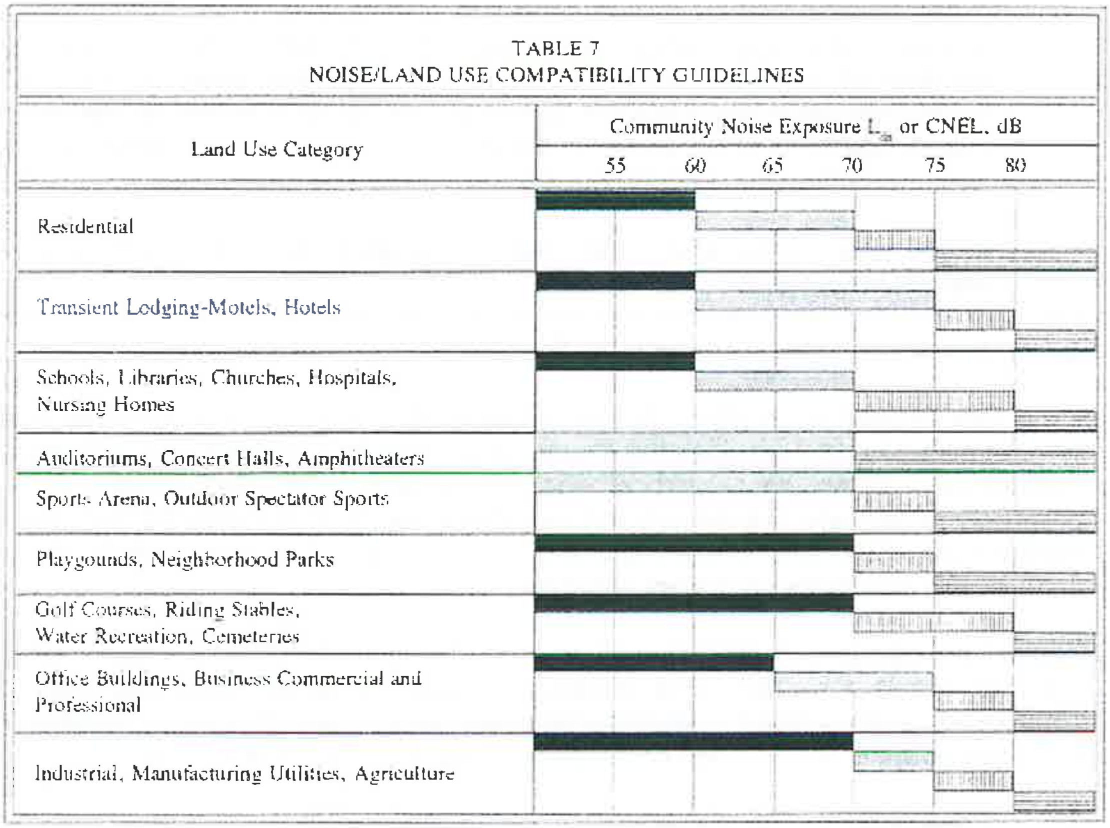
The California Noise Insulation Standards, California Code of Regulations Title 24, establishes a maximum interior noise level, with windows closed, of 45 dB CNEL, due to exterior sources. This requirement is applicable to new hotels, motels, apartment houses and dwellings other than detached single-family dwellings.

The County of Imperial hereby establishes the following additional interior noise standards to be considered in acoustical analyses.

- The interior noise standard for detached single family dwellings shall be 45 dB CNEL.

- The interior noise standard for schools, libraries, offices and other noise-sensitive areas where the occupancy is normally only in the day time, shall be 50 dB averaged over a one-hour period ($L_{eq}(1)$).

Table 7 - Noise/Land Use Compatibility Guidelines



Interpretation (For Land Use Planning Purposes)

Normally Acceptable

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

Normally Unacceptable

New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable

New construction or development clearly should not be undertaken.

TABLE 8
NOISE COMPATIBILITY CRITERIA

Land Use Category	CNEL, dBA				
	50-55	55-60	60-65	65-70	70-75
Residential					
single family, nursing homes, mobile homes	+	o	-	--	--
multi-family, apartments, condominiums	++	+	o	--	--
Public					
schools, libraries, hospitals	+	o	-	--	--
churches, auditoriums, concert halls	+	o	o	-	--
transportation, parking, cemeteries	++	++	++	+	o
Commercial and Industrial					
offices, retail trade	++	+	o	o	-
service commercial, wholesale trade, warehousing, light industrial	++	++	+	o	o
general manufacturing, utilities, extractive industry	++	++	++	+	+
Agricultural and Recreational					
cropland	++	++	++	++	+
livestock breeding	++	+	o	o	-
parks, playgrounds, zoos	++	+	+	o	-
golf courses, riding stables, water recreation	++	++	+	o	o
outdoor spectator sports	++	++	+	o	o
amphitheaters	+	o	-	--	--

++ Clearly Acceptable	The activities associated with the specified land use can be carried out with essentially no interference from the noise exposure.
+ Normally Acceptable	Noise is a factor to be considered in that slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities.
o Marginally Acceptable	The indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable on the conditions that outdoor activities are minimal and construction features which provide sufficient noise attenuation are used (e.g., installation of air conditioning so that windows can be kept closed). Under other circumstances, the land use should be discouraged.
- Normally Unacceptable	Noise will create substantial interference with both outdoor and indoor activities. Noise intrusion upon indoor activities can be mitigated by requiring special noise insulation construction. Land uses which have conventionally constructed structures and/or involve outdoor activities which would be disrupted by noise should generally be avoided.
-- Clearly Unacceptable	Unacceptable noise intrusion upon land use activities will occur. Adequate structural noise insulation is not practical under most circumstances. The indicated land use should be avoided unless strong overriding factors prevail and it should be prohibited if outdoor activities are involved.

2. Property Line Noise Standards

The Property Line Noise Limits listed in Table 9 shall apply to noise generation from one property to an adjacent property. The standards imply the existence of a sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate. These standards do not apply to construction noise.

These standards are intended to be enforced through the County's code enforcement program on the basis of complaints received from persons impacted by excessive noise. It must be acknowledged that a noise nuisance may occur even though an objective measurement with a sound level meter is not available. In such cases, the County may act to restrict disturbing, excessive, or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

TABLE 9 PROPERTY LINE NOISE LIMITS		
Zone	**Time**	**Applicable Limit One-hour Average Sound Level (Decibels)**
Residential Zones	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
Multi-residential Zones	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial Zones	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
Light Industrial/Industrial Park Zones	Anytime	70
General Industrial Zones	Anytime	75
Note: When the noise-generating property and the receiving property have different uses, the more restrictive standard shall apply. When the ambient noise level is equal to or exceeds the Property Line noise standard, the increase of the existing or proposed noise shall not exceed 3 dB L_{eq}.		

3. Construction Noise Standards

Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq}, when averaged over an eight (8) hour period, and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor of days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB L_{eq} when averaged over a one (1) hour period.

Construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays. In cases of a person constructing or modifying a residence for himself/herself, and if the work is not being performed as a business, construction equipment operations may be performed on Sundays and holidays between the hours of 9 a.m. and 5 p.m. Such non-commercial construction activities may be further restricted where disturbing, excessive, or offensive noise causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

4. Significant Increase of Ambient Noise Levels

The increase of noise levels generally results in an adverse impact to the noise environment. The Noise/Land Use Compatibility Guidelines are not intended to allow the increase of ambient noise levels up to the maximum without consideration of feasible noise reduction measures. The following guidelines are established by the County of Imperial for the evaluation of significant noise impact.

a. If the future noise level after the project is completed will be within the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, but will result in an increase of 5 dB CNEL or greater, the project will have a potentially significant noise impact and mitigation measures must be considered.

b. If the future noise level after the project is completed will be greater than the "normally acceptable" noise levels shown in the Noise/Land Use Compatibility Guidelines, a noise increase of 3 dB CNEL or greater shall be considered a potentially significant noise impact and mitigation measures must be considered.

D. Programs and Policies

1. Acoustical Analysis of Proposed Projects

The County shall require the analysis of proposed discretionary projects which may generate excessive noise or which may be impacted by existing excessive noise levels, including but not limited to the following:

- An analysis shall be required for any project which would be located, all or in part, in a Noise Impact Zone as specified above.
- An analysis shall be required for any project which has the potential to generate noise in excess of the Property Line Noise Limits stated in Table 9.
- An analysis shall be required for any project which, although not located in a Noise Impact Zone, has the potential to result in a significant increase in noise levels to sensitive receptors in the community.

An acoustical analysis and report shall be prepared by a person deemed qualified by the Director of Planning. The report shall describe the existing noise environment, the proposed project, the projected noise impact and, if required, the proposed mitigation to ensure conformance with applicable standards.

2. Noise/Land Use Compatibility

Where acoustical analysis of a proposed project is required, the County shall identify and evaluate potential noise/land use conflicts that could result from the implementation of the project. Projects which result in noise levels that exceed the "Normally Acceptable" criteria of the Noise/Land Use Compatibility Guidelines, Table 7, shall include mitigation measures to eliminate or reduce to an acceptable level the adverse noise impacts.

3. Agricultural Noise/Right to Farm Ordinance

In recognition of the role of agriculture in the County, the Board of Supervisors has adopted a Right to Farm Ordinance (No. 1031). This ordinance requires a disclosure to owners and purchasers of property near agricultural lands or operations, or included in an area zoned for agricultural purposes. The disclosure advises persons that discomfort and inconvenience from machinery and aircraft noise resulting from conforming and accepted agricultural operations are a normal and necessary aspect of living in the agricultural areas of the County. The complete disclosure notice is contained in Appendix C.

If any residential or other noise sensitive land use is proposed within one-quarter mile (1,320 feet) of existing farmland which is in an agricultural zone, such proposed project shall be required to have prepared an acoustical analysis to evaluate potential noise impacts from farm operations on the proposed project. This may include an analysis of impact from operation of farm machinery or trucks hauling farm products on public roads.

4. Interior Noise Environment

Where an acoustical analysis of a proposed project is required, the County shall identify and evaluate projects to ensure compliance to the California (Title 24) interior noise standards and the additional requirements of this Element. Prior to the issuance of a building permit, an acoustical analysis, or equivalent documentation, must be submitted that demonstrates compliance with the standard for all buildings to be located in an area of exterior noise level greater that 60 dB CNEL. No formal analysis may be required if the standard can be achieved by the minimum noise reduction indicated in Table 10 for the construction type proposed by the building permit or project.

TABLE 10 NOISE REDUCTION PROVIDED BY COMMON BUILDING CONSTRUCTION METHODS			
Construction Type	**Typical Occupancy**	**General Description**	**Range[1] of Noise Reduction, dB(A)**
1	Residential, Commercial, Schools	Wood framing. Exterior stucco or wood sheathing. Interior drywall or plaster. Sliding glass windows. Windows partially open.	15 - 20
2	Residential, Commercial, Schools	Wood framing. Exterior stucco or wood sheathing. Interior drywall or plaster. Sliding glass windows. Windows partially closed.	25 - 30
3	Commercial, Schools	Wood framing. Exterior stucco or wood sheathing. Interior drywall or plaster. Sliding glass windows. Fixed 1/4 inch plate glass windows.	30 - 35
4	Commercial	Steel or concrete framing. Curtain wall or masonry exterior wall. Fixed 1/4 inch plate glass windows.	30 - 40

[1] The range depends upon the openness of the windows, the degree of seal and the window area involved.

5. New Noise Generating Projects

The County shall identify and evaluate projects which have the potential to generate noise in excess of the Property Line Noise Limits specified in Table 9. An acoustical analysis must be submitted which demonstrates the project's compliance with the Property Line Noise Limits, and/or required mitigation measures to reduce noise to acceptable levels. Mitigation may include a greater property line setback than required by the Zoning Ordinance, use of solid building walls without openings, noise attenuation walls and/or landscaped earth berms, alternative construction materials or design, alternative traffic patterns, or other noise reduction techniques.

6. Projects Which Generate Off-Site Traffic Noise

The acoustical analysis shall identify and evaluate projects which will generate traffic and increase noise levels on off-site roadways. If the project has the potential to cause a significant noise impact to sensitive receptors along those roadways, the acoustical analysis report shall consider noise reduction measures to reduce the impact to a level less than significant, including reduction of the intensity of the proposed project, construction of noise attenuation walls and/or landscaped earth berms, or other changes in project design or its proposed access. For non-residential projects, reduced hours of operation may also be required.

7. Roadway Improvement and New Roadway Projects

The County shall evaluate the noise impact potential of proposed roadway projects. Where noise impacts to sensitive receptors exceed the criteria specified above under "Significant Increase of Ambient Noise Levels", mitigation measures shall be included, where feasible, to reduce the increase to an acceptable level. If the mitigation cannot be expected to conform to the criteria specified under "Significant Increase of Ambient Noise Levels" and exceed the "Noise/Land Use Compatibility Guidelines" specified in Table 7, the proposed roadway project shall not be approved unless a "Statement of Overriding Considerations" is made by the project approval authority pursuant to the *State CEQA Guidelines*, Section 15093.

Federally funded projects shall comply with the applicable Federal Highway Administration (FHWA) standards.

8. Mitigation of Noise Impacts

Where acoustical analysis indicates the potential for conflict with County noise standards or for significant noise impact, mitigation measures should be considered and incorporated into the project. Noise reduction measures may be applied at the source of the noise, along the path of the noise or at the receptor.

a. Noise Sources

Modification of noise sources may not feasible for many projects, especially where the source is transportation noise. The reduction of vehicle noise is usually the responsibility of federal and state agencies. However, on each analysis, reduction of noise at the source should be considered. If reduction at the source is possible, this is often the best solution for the noise environment. In transportation applications, the location of the source, or the frequency of operation may be modified in certain situations. For example, the designation of a truck route may move a source of vehicle noise to a less sensitive area; the reconfiguration of airport takeoff and landing patterns may change the impacts of the noise source.

In non-transportation applications, reduction of noise at the source may be possible in single source applications by a change in the nature of the source or the specification of the source. Gasoline engines are quieter than diesel engines; mufflers are available for many types of equipment; pumps, motors, and many types of equipment may be specified for maximum noise ratings.

b. The Noise Path

Modification of the noise path is the most common method of noise reduction. Noise reduction measures may be applied near the source, in mid-path, or near the sensitive receptor(s). Path modification may be effected by increasing the direct distance between the source and receptor or, more commonly, placing a barrier between the source and receiver. A noise barrier may be constructed solely for the purpose of noise reduction; a noise barrier may be comprised of other project elements. This latter type is discussed below in the sections related to site planning and architectural layout.

Noise Barriers. Noise barriers constructed exclusively for the purpose of noise reduction are most commonly used in connection with industrial noise sources and with ground transportation. The former case would include housings or buildings around pumps, motors, transformers and machinery. To reduce the impacts of ground transportation noise, walls or berms may be constructed along the rights-of-way of highways. Noise walls should be high enough to break the line of sight between the source and receptor; the wall should be long enough to prevent noise "flanking" around the end of the barrier; the wall should be thick enough to prevent significant noise transmission through the wall. To be effective, walls must be solid for the area of design. Even a small amount of opening will defeat the purpose of the wall.

The planning of a noise barrier must consider, in addition to acoustical requirements, aesthetics, safety and maintenance. Where a significant part of roadway noise comes from heavy trucks, as is the case in Imperial County, noise walls may have to be eight feet high to be effective, and visual impacts, as well as costs, may become paramount. Where feasible, earth berms may be used instead of walls, or a berm-wall combination. The advantages of earth berms are that a berm is more effective than a wall in noise reduction, and landscaping of a berm may improve aesthetics. The disadvantage of a berm is the additional ground area required. Where noise barriers are desired, and receptors do not want to lose a view, transparent walls, of glass or plastic, may be specified.

Site Planning. Consideration of noise impacts in site planning, using the shape and terrain of the site and the arrangement of project elements, can substantially reduce or eliminate adverse noise impacts. Site planning techniques for noise impact reduction include,

- Increasing the distance between the noise source and the sensitive receptor;
- Placing non-sensitive land uses, such as parking lots, open space, maintenance facilities and utility areas between the source and receptor;
- Using non-noise-sensitive structures, such as garages, to shield noise-sensitive areas;
- Orienting buildings to place the building as a shield between the source and the outdoor spaces of the building.

It should be noted that wide planted areas, such as parks or open space, provide greater noise attenuation that "hard" spaces, such as parking lots.

Architectural Layout. Noise reduction can be achieved by appropriate layout of the noise-sensitive spaces. For example, bedrooms will be quieter if placed on the side of the housing facing away from a roadway. U-shaped buildings can provide shielded, interior outdoor activity spaces. Noise-conscious architectural layout can often eliminate the need for costly construction modifications.

c. Noise Receptors

In most cases, the reduction of noise impact by some combination of source control and path modifications, as described above, is preferable to construction modifications at the receptor. In other cases, such as a single isolated receptor, construction modifications may be the most cost-effective solution to the noise problem. In general, the most effective modifications to reduce interior noise are made by reducing the area of windows, doors and other penetrations, such as ventilation intakes, exposed to the noise source and by making the windows, doors and other penetrations more resistant to noise transmission. Sealed windows, or well-sealing openable windows are efficient; mechanical ventilation must be provided for closed-windows conditions. Thicker window glass or double glazing may be appropriate. Solid doors and gaskets around door openings should be provided. In addition to door and window treatment, wall and roof insulation may be evaluated for noise reduction effectiveness.

9. Noise Regulations

The provisions of this Element applicable to activities where no discretionary application is required pursuant to the County Zoning Ordinance or Subdivision Ordinance, or a Specific Plan or General Plan Amendment is not involved, shall be implemented by an appropriate amendment to the Imperial County Code of Regulatory Ordinances. This shall include measures relative to "Property Line Noise Standards" and "Construction Noise Standards" specified above; and may include enforcement provisions and appropriate penalties for non-compliance.

APPENDIX A

GLOSSARY OF TERMS

Acoustical Analysis Report: A report required when a proposed project may result in excessive noise or a violation of County noise standards. The report would provide analysis of existing and proposed noise conditions in the project area, and mitigation measures to be incorporated into the project to eliminate or reduce noise impacts.

Acoustics: The science and technology of sound, including its production, transmission and effects.

Ambient Noise: All-encompassing noise associated with a given environment, being usually being a composite of sounds from many sources, near and far. No particular sound is dominant.

A-weighted sound level: The sound level obtained by the use of A-weighting, which is the numerical correction of sound levels measured by a sound level meter to correspond to the sensitivity of the human ear to various frequencies of sound. The unit of measurement is the decibel (dB); often the symbol is written dB(A) to indicate that A-weighting has been used.

Community Noise Equivalent Level, CNEL: The 24-hour equivalent continuous sound level, i.e., the time-averaged A-weighted sound levels, in decibels, from midnight, obtained after the addition of 5 dB to sound levels from 7:00 p.m. to 10:00 p.m. and 10 dB to sound levels from midnight to 7:00 a.m. and from 10:00 p.m. to midnight.

Discretionary Project: A designation used in the California Environmental Quality Act (CEQA) to describe a project which requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity. A project which is not a discretionary project is a ministerial project. In Imperial County, discretionary approval is required for specific plans, tentative maps, and subdivisions.

Equivalent Continuous Sound Level, L_{eq}: The level of a steady sound which, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.

Frequency: Of a periodic phenomenon, such as a sound wave; the number of times in one second that the phenomenon repeats itself. The unit of frequency is the hertz (hz), which corresponds to one cycle per second.

Ministerial Project: As defined in CEQA, a ministerial project describes a government decision involving little or no personal judgment by the public officials to the wisdom of carrying out the project. A ministerial decision involves the uses of fixed standards or objective measurements. Examples of ministerial decisions are automobile registrations and marriage licenses. A building permit may be a ministerial decision if the ordinance requiring the permit limits the public official to determining if the zoning requirements have been met, the project meets the Uniform Building Code and the fees have been paid.

Noise: Unwanted sound.

Noise level: Sound level.

Sound: (1) An oscillation in pressure in an elastic medium which is capable of evoking the sensation of hearing. (2) The sensation of hearing excited by acoustic oscillation.

Sound level: The quantity, in decibels, measured by an instrument satisfying a standards requirement, e.g., the American National Standard Specification for Sound Level Meters S1.4. Mathematically, sound level in decibels is 20 times the logarithm to the base 10 of the ratio of a given sound pressure to the reference sound pressure of 20 micropascals.

APPENDIX B
AIRPORT NOISE CONTOUR MAPS
Figure B-1 - Future Noise Contours Brawley Municipal Airport
(Revised June 1996)

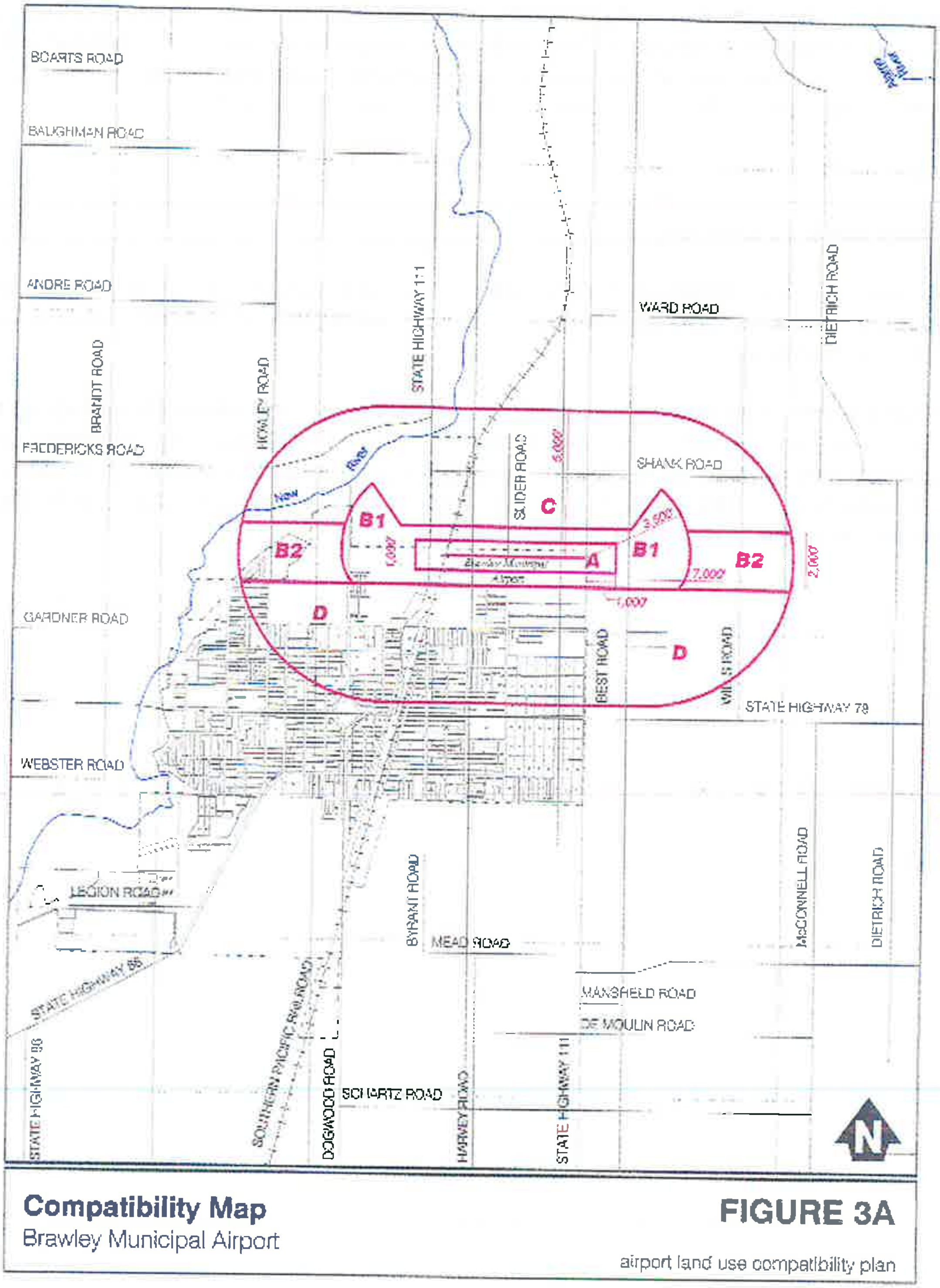
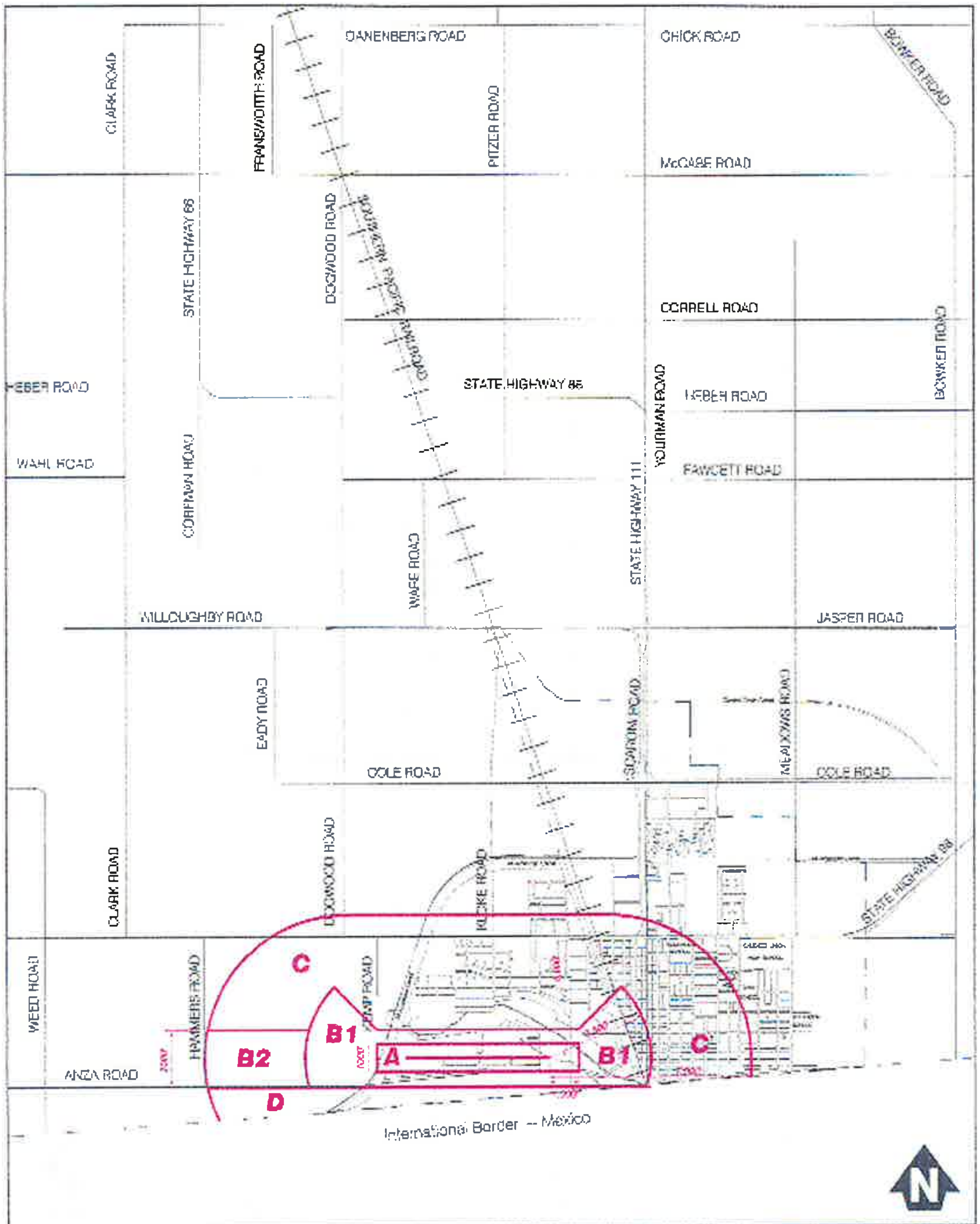


Figure B-2 - Future Noise Impact Area Calexico International Airport (Revised June 1996)



Compatibility Map
Calexico International Airport

FIGURE 3B
airport land use compatibility plan

Figure B-3 - Future Noise Impact Area Calipatria Municipal Airport
(Revised June 1996)

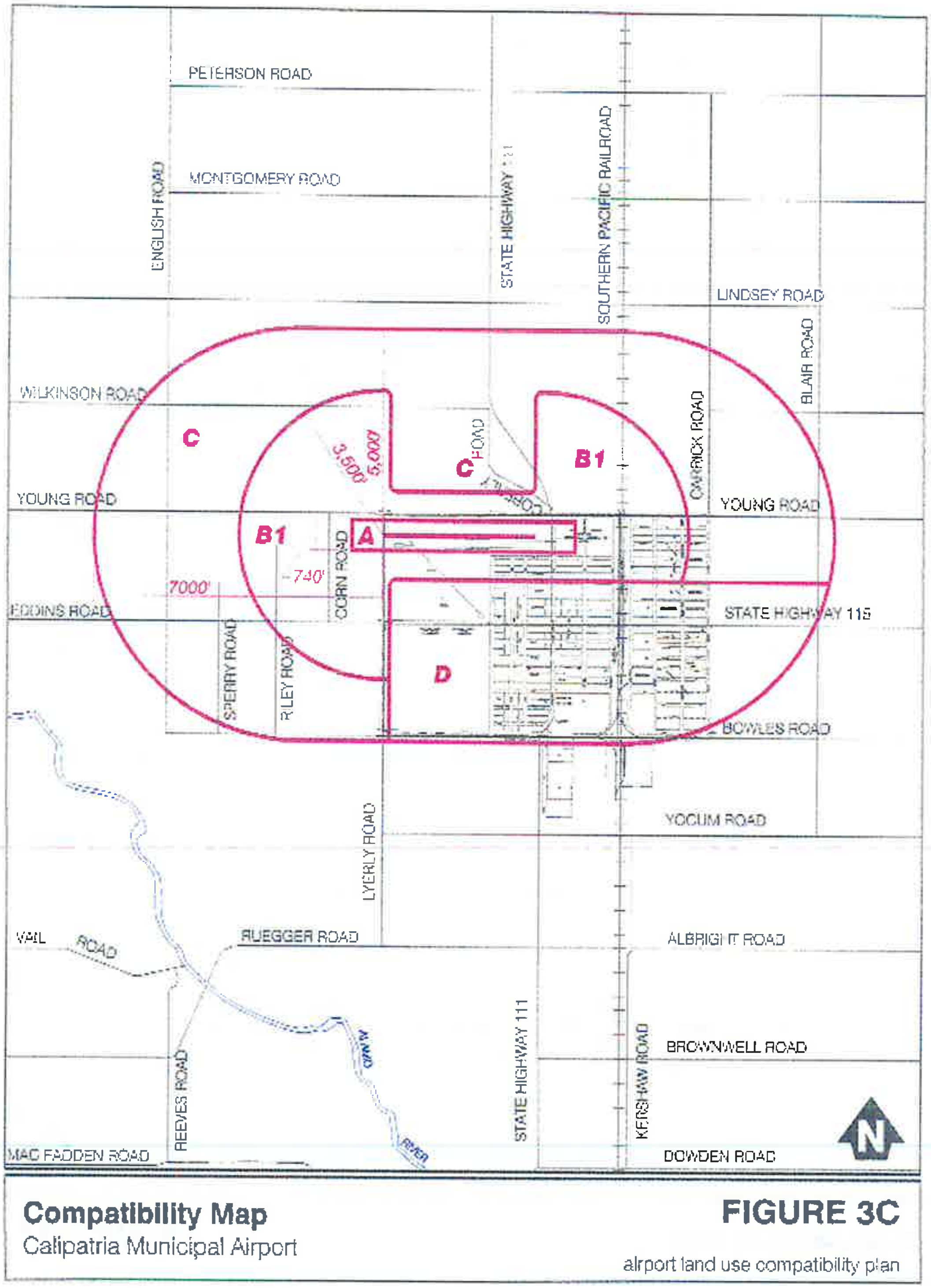


Figure B-4 - Future Noise Impact Area Imperial County Airport
(Revised June 1996)

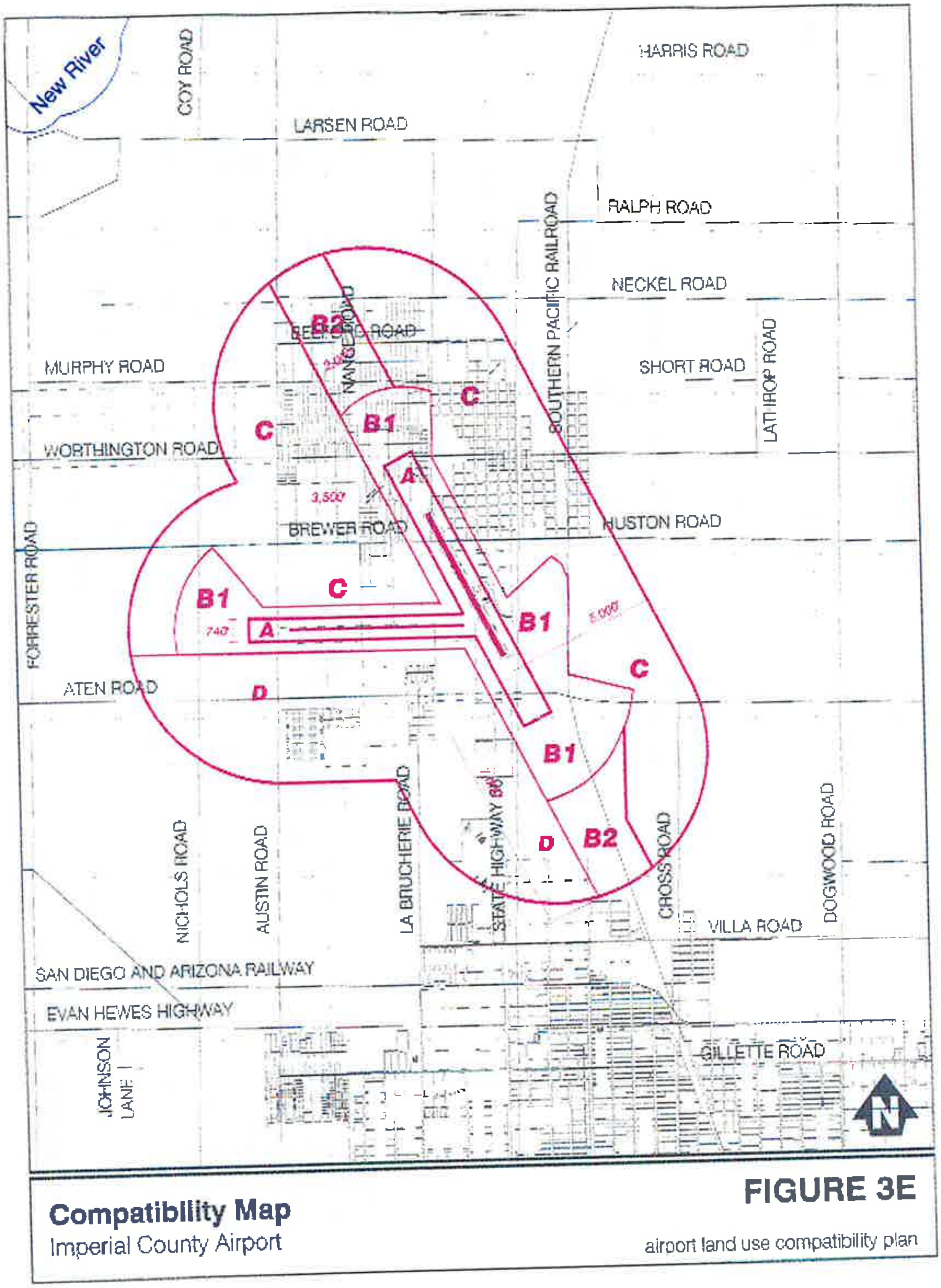
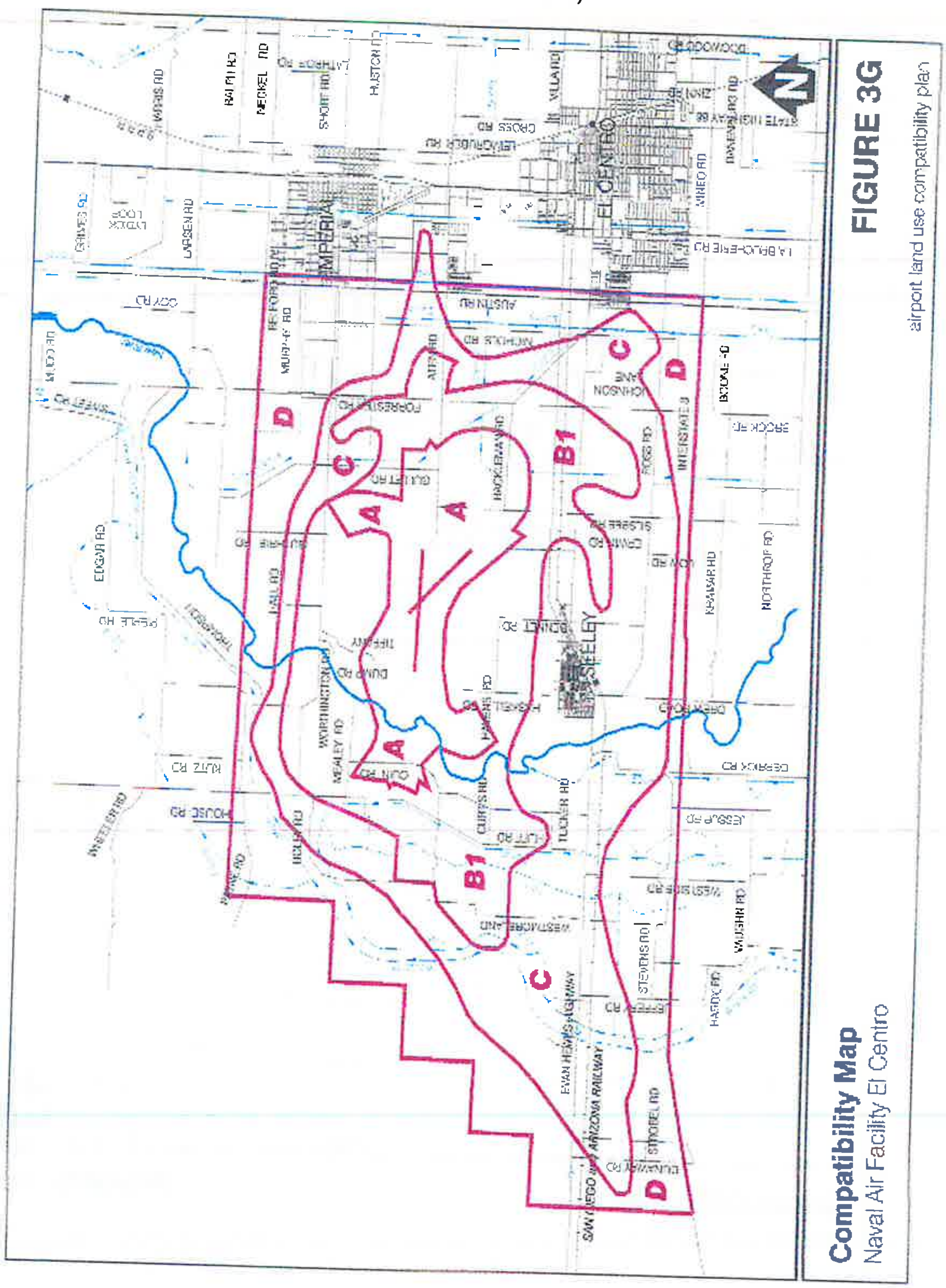


Figure B-5 - Future Noise Impact Area NAF El Centro
(Revised June 1996)



Appendix 8

HSE
Health & Safety
Executive

Practical solutions to noise problems in agriculture

Prepared by **Silsoe Research Institute** and
RMS Vibration Test Laboratory for the
Health and Safety Executive 2004

RESEARCH REPORT 212

Practical solutions to noise problems in agriculture

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Trends in farm practices and machinery development are reviewed, and information sources searched for data on noise exposure on farms that can be associated with machinery, equipment or farm animals. Noise control techniques and legislation are reviewed in relation to recent developments and their applicability to on-farm conditions. The control of noise sources that expose operators to daily personal noise exposures ($L_{EP,d}$) of 89 – 104 dB(A) is discussed and seven examples are selected for use as demonstration projects. Seven case studies are undertaken to determine if cost effective solutions can be implemented utilising on-farm labour and low cost materials. The case studies demonstrate that a useful reduction in the daily noise exposure values can be achieved by the selected solutions, in the range 3 – 16 dB(A), although additional personal hearing protection may still be required in certain situations.

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EXECUTIVE SUMMARY

A review of trends in farm practices and machinery development is undertaken, based on a search of literature and electronic information sources for published data on noise exposure in agriculture. That search yielded rather little to add to a report produced for the HSE in 1988, but resulting information has been included in selecting a primary list of 27 example noise problems for which treatment could be considered. These examples are associated with operator daily exposure ($L_{EP,d}$) of between 89 dB(A) and 104 dB(A). They are drawn from a range of stationary and mobile machinery, as well as animal handling activities.

Noise control techniques and legislation are reviewed, with emphasis on recent developments and on applicability to on-farm conditions. In many cases it was found that there have been no revolutions in materials and techniques. Rather there has been steady improvement in consistency and durability of products, with a marked increase in the availability of materials and equipment for noise control. In most cases there is little to deter the use of these on farms, other than cost.

Each of the potential example noise problems in the primary list is considered in relation to possible noise control treatments. Several, such as portable powered equipment, are eliminated as being suitable only for use with Personal Protective Equipment (hearing defenders). The following seven cases were selected as suitable for further consideration:

- Farm-scale potato pre-cleaning / grading line;
- Grain drier;
- Animal feed preparation machinery (milling / mixing);
- Tractor (PTO)-powered machine;
- Vegetable packing shed;
- Animal vocalisation during feeding;
- Cabs of mobile machines with inadequate or damaged acoustic materials

Each case is investigated with the view to demonstrating practical and economic noise reduction techniques in an agricultural situation, and in six of the cases an appropriate noise reduction solution is implemented either by SRI or farm staff. The results of the noise measurements before and after treatment are given, along with the recorded noise spectra, and all demonstrate an improvement between 3 - 16 dB(A) in the ambient / operator noise level, equivalent to a reduction in 3 – 16 dB(A) in the daily noise exposure.

1 INTRODUCTION

1.1 BACKGROUND

Thirty years ago the noise exposure of farm workers was dominated by what they received when operating tractors (Matthews, 1971; Tomlinson, 1970), but work had already started to control this (Matthews & Talamo, 1970). The resulting Quite (Q)-cabs introduced from 1974 have reached such a state of development that exposure to noise from other sources on the farm may in many cases exceed that from tractor operations. In parallel with this, there has been a trend towards increasing worker protection through reducing action levels for noise exposure (e.g. European Parliament (2002)). It is therefore appropriate to consider ways in which the exposure of farm workers to noise from other sources can be reduced.

This report has been prepared with the aim of assisting that end by identifying examples of farm machinery, equipment or operations that can provide demonstration material for noise reduction methods that are suitable for application on farms. It comprises the results of a search of information sources to collate data on noise exposure from all sources on the farm, together with a brief review of noise control techniques, including recent developments and some assessment of applicability to farm conditions. The noisiest sources are then discussed in relation to the possibility of treatment, and a number are selected as candidates for demonstration case studies. Each of these case studies details the selection of a suitable noise reduction method(s), the materials used and typical costs, and the benefits achieved, in terms of the reduction of ambient/operator noise levels.

A recent survey of noise exposure and hearing damage (Palmer *et al*, 2001) for the population as a whole did include farm workers, but the number was small, and effectively the most recent survey of agricultural worker exposure was that of Talamo *et al* (1988), carried out during 1985-1987. Since that time a number of changes have occurred, both regarding UK agriculture and the machinery used by it: this is considered first, by way of introduction.

Figure 1 clearly illustrates that during the 1987 – 2000 period, the number of UK agricultural holdings has diminished significantly, across both arable and livestock sectors: however, those remaining have increased in both size (see Figure 2) and productivity. Farm enterprise structure has also changed, with moves towards "operational" amalgamation of individual enterprises, as typified by corporate / contract farming in the arable sector, in order to optimise utilisation of larger, more productive machinery and spread labour costs over larger cropped areas, thereby reducing Fixed Costs. However, during the period in question, farm labour force reductions have not been restricted to the arable sector; the number of workers employed in the industry having reduced by 35% (DEFRA, 2001)

These changes have, to an extent, been offset by corresponding changes in agricultural machinery and associated working practices. Agricultural tractor sales are recognised by the industry as an accurate indicator of mechanisation trends, particularly in the arable sector. The 1987 – 2000 period witnessed a substantial reduction in unit sales (see Figure 3), but this was largely offset by significant rise in the average size of vehicle sold (see Figure 4), indicating that today's agricultural industry uses fewer, larger, more productive machines, frequently selected to enable labour force reductions. Whilst such equipment generally embodies higher technological content and improved levels of operator comfort, its higher purchase price necessitates greater annual usage in order to offset depreciation costs. Although independent data is not available to support the view, it is widely recognised within the agricultural engineering industry that annual, and particularly daily, usage levels of higher capacity / higher cost machines has increased significantly, especially given that many customers are large farming enterprises and/or agricultural contractors. To illustrate the point, today many front line agricultural tractors complete 2000 hours per year, whereas a couple of decades ago usage exceeding 1000 hours per year was considered intense. Another example would be a contractor who would now wish to operate a self-propelled sugar beet harvester for at least 70 hours per week during the October – February period.

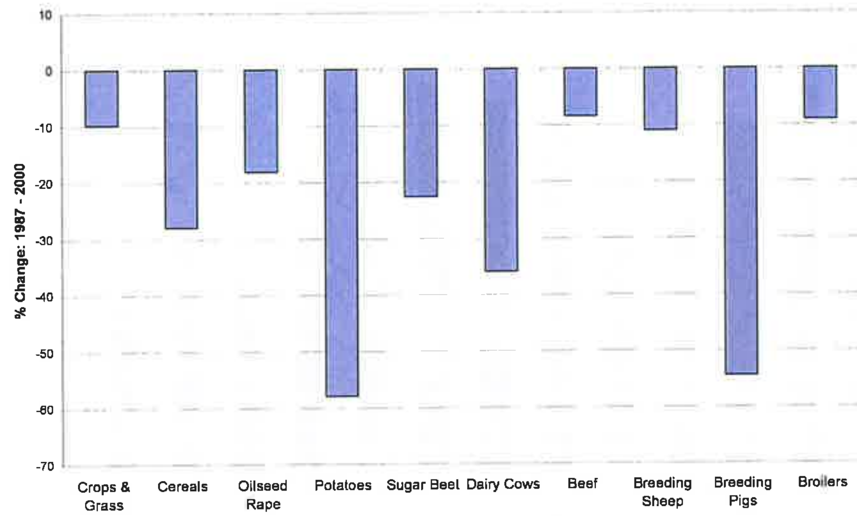


Figure 1 Change in number of UK agricultural holdings: 1987-2000

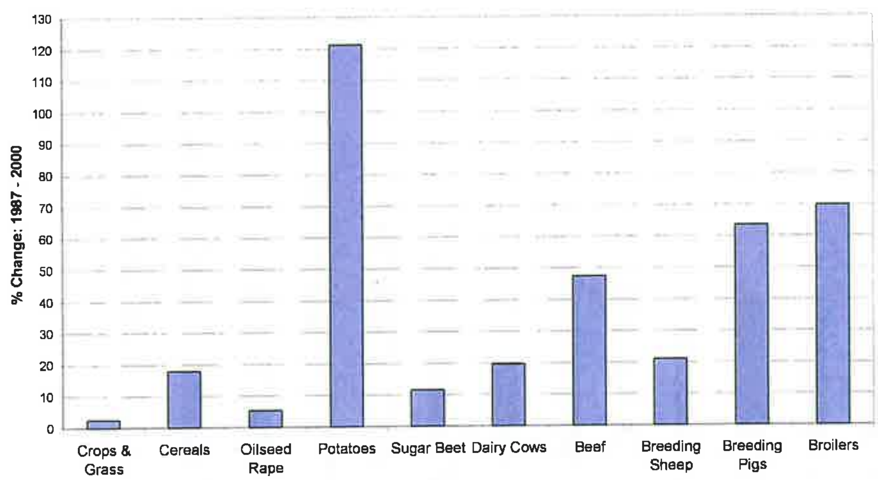


Figure 2 Change in UK holding average cropped area / herd size: 1987-2000

Whilst these trends typify the large farm enterprise / contractor sector, the bulk of UK agriculture is still represented by family-owned units employing small numbers of staff, often on a casual basis. Whilst such enterprises probably use the services of agricultural contractors for specific tasks (e.g. harvesting, silage making), day-to-day operation has remained largely unchanged, particularly if livestock form part of the enterprise. The size / capacity of equipment used may well have increased and numbers reduced correspondingly, but the type of machinery, its general method of operation and hence its ability to generate noise have not changed significantly, although this is discussed in more detail in Section 2. Livestock enterprises have increased in size (see Figure 2), but once more, with the possible exceptions of greater agricultural contractor utilisation and/or intermittent hire of higher capacity machines from machinery pools, etc, for use by on-farm staff, the basic operations which are undertaken and the machines which perform them have changed little.

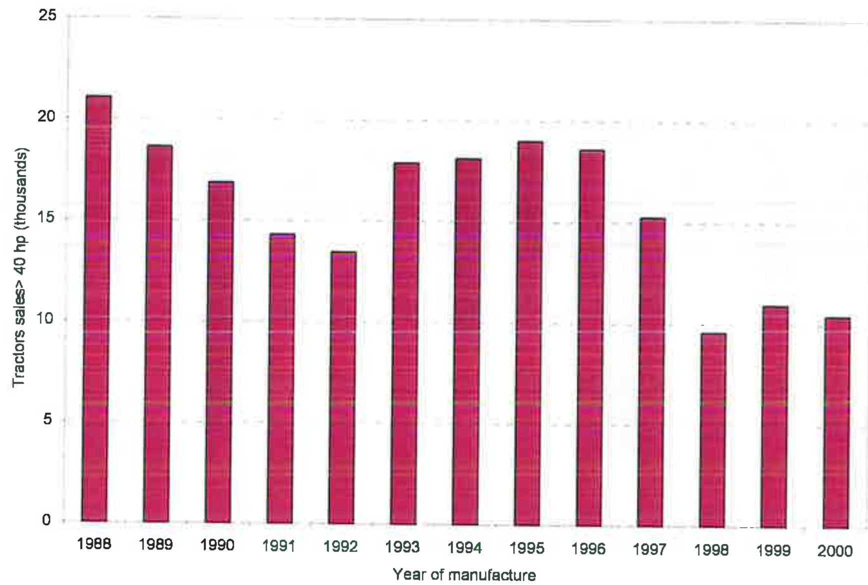


Figure 3 UK sales of agricultural tractors (above 40 hp)

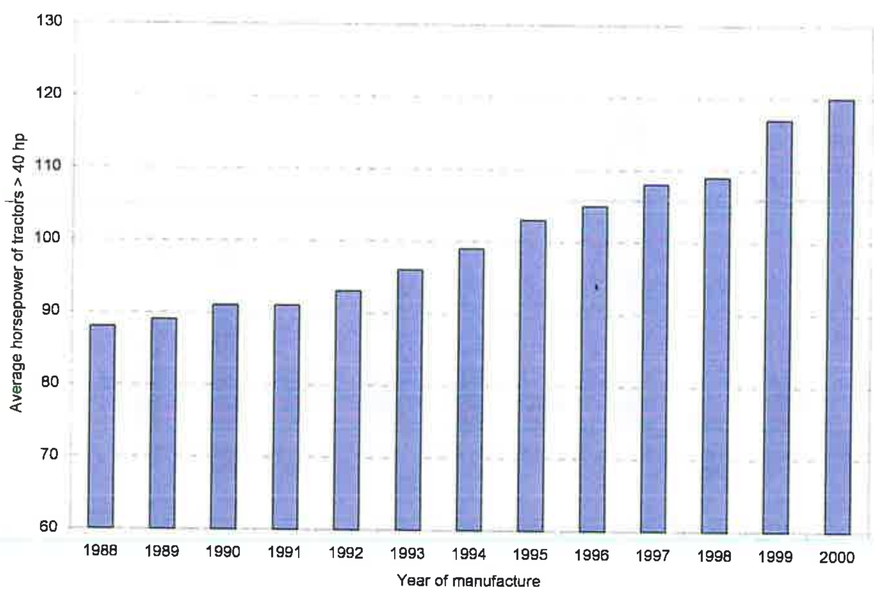


Figure 4 Average engine power of tractors (above 40 hp) sold in the UK

In the following discussion of individual types of noise source, some attempt has been made to include the possible impact of these changes. However, in many cases this amounts to a situation in which fewer workers are exposed to noise sources for longer durations.

1.2 REGULATIONS AND HEARING PROTECTION

It has been widely accepted for some years that exposure to loud noise can cause loss of hearing or tinnitus (ringing in the ears), or both. Noise-induced hearing loss is additional to the natural and progressive loss of hearing with advancing age. Consequently, a relatively small loss of hearing acuity of, e.g.30dB, which may not cause an impairment that is noticeable to someone aged 25 years, can bring forward by more than a decade the age at which the overall effect does become a handicap.

It has been well established that the effects of noise on hearing are predicted by a value of dB(A) averaged over the working day (L_{eq}). The daily exposure value is also adjusted for the length of the working day, according to the equal energy principle, to give a level for a nominal 8-hour day (L_{a8} or $L_{EP,\,d}$). In any regulations or legislation, Action Levels or Limit Levels are assumed to be expressed in dB(A) ($L_{EP,\,d}$).

The UK has had its own regulations to control the exposure of workers to noise for some years (Noise at Work Regulations, 1989). The salient points of these are outlined below, followed by the important changes that the new Directive will introduce.

The present UK Regulations prescribe two Action Levels. The first Action Level is at 85 dB(A), and the second Action Level at 90 dB(A). A peak pressure of 200 Pascals carries the same requirements as the Second Action Level, even when the $L_{EP,d}$ is less than 90 dB(A).

Whatever the level of daily exposure, employers are required to reduce the risk of hearing damage to the lowest level reasonably practicable. They are also required to assess whether any of their workers are likely to be exposed to such an extent as to be presented with a possible risk to their hearing. If this is likely to be the case, they have to use appropriate means (usually measurements and calculations based on known work patterns) to compare exposures with the two Action Levels, and they have to keep records of these assessments and any subsequent ones.

Where the First Action Level is exceeded, workers must have the risk explained to them, be provided with regular checks of hearing health, and be offered hearing protection (which they are not required to accept). Where the Second Action Level is exceeded there is a duty on the employer to reduce the exposure, so far as is reasonably practicable, by means other than hearing protection. This may involve a programme of physical measures to reduce noise levels and management measures to reduce exposure time. Further to this, any places where employees have to wear hearing defenders must be clearly marked as “ear protection zones”. The use of hearing protection is mandatory until exposures have been reduced to below the Second Action Level

Other European countries have their own noise regulations that are more or less similar. Since these have all been in force for more than a decade, it was thought that it was time to introduce a new Directive to reflect the lower noise levels that are now possible in many industries, and to provide more effective protection for workers. Differences between the Directive and the present UK Regulation are broadly as follows.

1 The First Action Level is lowered from 85 dB(A) to 80 dB(A).

2 The Second Action Level is lowered from 90 dB(A) to 85 dB(A).

3 A Limit Level is introduced, that must not be exceeded. This is set lower than the present UK Second Action Level, at 87 dB(A). This value is allowed to take into account the "assumed attenuation" of hearing protectors, which must of course be worn if they are necessary to achieve compliance.

4. Peak pressure levels are prescribed, equivalent to both Action levels and the Limit level, as follows:

First Action Level	112 Pascals	(135 dB)
Second Action Level	140 Pascals	(137 dB)
Limit Level	200 Pascals	(140 dB)

In some "duly justified" circumstances, it may be allowed to use a dB(A) value that is averaged over a week.

The requirements at the first and second Action Levels are broadly similar to those at each of the two UK Action levels:

When the First Action Level is exceeded:
- Workers must be provided with information and training
- Workers must be offered hearing protectors
- Audiometric testing must be available

When the Second Action level is exceeded:
- There must be a programme of technical and organisational measures aimed at reducing exposure to noise.
- Areas of high noise level must be marked and delimited, and access must be restricted.
- The use of hearing protectors is mandatory.
- Workers must have the right to hearing checks by a doctor.

The lowering of the First Action Level is likely to bring many more workplaces within the scope of the regulation, including those in the farming industry.

The inclusion of an enforceable Limit Level is likely to have an effect in some industries. The setting of this Limit Level just 2 dB(A) above the Second Action Level may lead to some difficulties in interpreting what is intended. In essence, when the noise environment leads to exposure above the Second Action Level, and until such time as other measures have been put in place successfully to reduce the exposure, hearing defenders must be worn. These hearing defenders should bring the exposure below 85 dB(A) ($L_{EP,d}$). However, because the exposure inside the hearing protectors can be estimated only by using an **assumed value** of attenuation which is not known precisely for each particular environment, the Limit Value is relaxed by 2 dB(A). In any case, the use of hearing protection does not remove the duty to introduce technical and organisational measures aimed at reducing the noise exposure.

In agriculture, the wearing of suitable hearing defenders would be enough to bring daily exposure below 85 dB(A). However, and in addition to the requirement to reduce exposure by other means, the frequent presence of dusty environments and the need to use auditory monitoring of machines and processes often renders hearing defenders uncomfortable or impractical. The new Directive is therefore going to require farmers to make more effort to control noise at source than has previously been the case.

2 IDENTIFICATION OF NOISE PROBLEMS

2.1 LITERATURE SEARCH

The bibliographic databases that have been searched are summarised in Table 1, and, where possible, the search was extended back to 1985. Silsoe Research Institute's (formerly the National Institute of Agricultural Engineering) own publications record indicates that research into agricultural noise and agriculture worker hearing damage extends back to at least 1964. Searches of the bibliographic databases indicate that little research into agricultural noise has been carried out after 1987. However more recently, surveys of reduction of hearing acuity and incidence of tinnitus have been carried out in Japan (Miyakita and Ueda, 1997), the USA (Beckett et al., 2000) and the UK (Palmer et al., 2001). In a series of studies on high school farm students, the significant hearing loss found in adult farmers was considered to begin in childhood (Broste et al., 1989).

Table 1 Summary of internet literature search
(Keywords: noise and agriculture)

Database searched	*Details of search*	*Number of responses*	*Comments*
Zetoc	1985 to present	17	References of little use to this project
CAB abstracts	1973 to present	18	Relevant citations but little present that will expand our knowledge
Ingenta	1988 to present	2	Nothing that adds to our knowledge
OCLC	1992 - 2001	28	1 reference to the application of noise control on farms
Ergonomic Abstracts	Whole database	56	6 possibly useful references
Web of Science	Whole database	27	4 possibly useful references
Google	Search Engine for the internet	>24,000	Results too diverse. Rearrangement of the keywords to the phrase 'agricultural noise' produced 0 responses.
NASD	website	2 down-loaded	Of limited use

The most recent extensive survey of worker exposure to agricultural machinery noise was carried out by Talamo *et al.* (1988) in 1985-7, whose purpose was to estimate the levels of worker noise dose for the whole agricultural year, rather than to identify machinery from which excessive noise emanated. The structure of the survey, however, allowed a breakdown of the noise exposure from various types of machinery that included stationary, man-carried, tractor drawn and/or powered, and self-propelled. In the past 15 years there have been developments in agricultural machinery that have made some of the machinery encountered then obsolete, and others that have required the use of more powerful tractors that are fitted with Q-cabs. However, some types of machinery encountered in 1985 to 1986 will still be in use today, because of the general longevity of agricultural machinery and because of little or no change in machinery design where it was found to be effective. A breakdown of the noise dose levels according to machinery type encountered in the survey is presented in Appendix 1.

In the following sections, agricultural machinery noise sources have been sub-divided into the following categories:-

- Stationary Machinery;
- Mobile Machinery;
- Livestock.

Because of the comprehensive extent of the 1985-87 survey by Talamo *et al.* (1988), the results obtained are taken as reference values and compared with the proposed Second Action Level of 85 dB(A) (EU Physical Agents (Noise) Directive, 2002). Where more recent literature emphasises, contradicts or shows a change in the noise dose from the same category of machinery it too has been included, together with some sources not covered by Talamo *et al.* (1988). Values for $L_{EP,\,d}$ are rounded to the nearest integer dB, regardless of the implied precision of the data from which they have been taken.

2.2 STATIONARY MACHINERY

Stationary machinery describes all machinery that is either fixed in one location, generally because of its size or weight and the purpose for which it is used, such as a hammer mill, or machinery that can be moved from one location to another, but is used in a fixed place, such as a conveyor. For convenience, some machinery that tends to be used in a fixed location, such as angle grinders in a workshop, are included in this section.

2.2.1 Grain driers: The number of years of grain drier use was found to have a significant relationship with hearing loss in New York farmers (Beckett et al., 2000). The $L_{EP,\,d}$ (equivalent 8 hour average exposure level) for exposure to grain drier noise in the UK in 1985 was 92 and 96 dB(A) for cascade and cross flow driers respectively; well above the proposed Second Action Level of 85 dB(A): the major noise source within grain driers being axial fans. Average $L_{EP,\,d}$ noise exposure while working with green crop driers was 91 dB(A).

2.2.2 Feed milling equipment: Animal feed preparation technology has changed little in the last 20 years. Working with hammer mills and roller/crusher mills was found to give noise exposure levels of 87 and 95 dB(A) respectively. No further more recently published literature has been found which indicates likely current noise exposure levels for this type of machinery.

2.2.3 Hop machinery: The number of farmers producing hops in the UK has fallen from 380 in 1985-7 to 200 in 1995, and to less than 180 in 2001. The number of agricultural workers operating hop pickers and cleaners, and driers where noise exposure levels of 94 and 89 dB(A) respectively were measured (in 1985-7), is likely to have fallen. No further more recently published literature has been found which indicates likely current noise exposure levels for this type of machinery.

2.2.4 Vegetable packing stations: These are more akin to factories as they contain a variety of machinery designed for the cleaning, grading and packing of a variety of vegetables either in bulk or supermarket-ready form, in conventional or high quality packaging. All the machinery is housed under one roof and comprises a number of lines for different vegetables, sometimes housed in different rooms. The cleaning, processing and packaging is normally a continuous process. In the 1985-7 study, highest noise exposure levels of 92 dB(A) were encountered in the general operating area where pneumatically-powered automated packaging equipment was used. Noise exposure of workers working next to packer/weighers which operated using pneumatic valves and rams, also exceeded the action level at 89 dB(A). Much of the engineering found in these plants is manufactured in-house without regard to the siting of components that are noise emitters. Stainless steel sheet is commonly utilised for discharge chutes, and in general these are not damped and so emit high reverberant noise levels with vegetable impact.

2.2.5 Workshop tools: The action of angle grinders gave rise to average noise exposure levels of 91 dB(A). No developments are apparent that will reduce the noise exposure without changing their modus operandi.

2.3 MOBILE MACHINERY

This category encompasses all farm machinery that is mobile. It includes self- propelled vehicles, trailed powered machinery, horticultural machines including those that are used in a stationary location but are tractor mounted such as a wood chipper, and man-carried machinery such as chain saws and brush cutters.

2.3.1 Effect of age on Q-cab noise attenuation: In an investigation of the effect of ageing on tractor cab noise attenuation (Talamo et al., 1990) 46 tractors were subdivided into 4 groups, according to similarity of model, and 5 & 10 years nominal age. Sound pressure measurements were made in the cab at the drivers ear position, whilst the tractor was subjected to maximum and light power take off (PTO) loading, at both 540 and 1000 rpm respectively. Visual assessments were made of the cabs' conditions including presence of doors and window glass, condition of door and window seals, control seals, floor mats and acoustic linings, and rated between 1 & 5. The cabs' anti-vibration mountings were examined for damage, whilst mounting brackets and bolts were examined for signs of fatigue. While the results of this study showed only a weak correlation between tractor age and noise level at the drivers ear, a negative correlation was indicted when all the tractor types and age were included. These results indicated the difficulty in using the same fault scoring system between different designs of cab. For example, a major fault in a cab seal might have achieved a score of one and greatly reduced noise attenuation, but its effect on the overall fault score would have been minimised if all the other aspects of cab condition were good and received high scores. More quantitative methods such as measuring the differential pressure between the inside and outside of the cab when fully shut per length of seal might have provided more useful information, or alternatively treating the different methods of noise attenuation present separately. The presence of cabs on many types of self-propelled machines, as well as tractors, both of which may remain in use for many years, makes their contribution to protecting workers' hearing particularly important. It also makes advice as to how to prolong their effectiveness particularly valuable. An article in PROFI International (Renfert-Deitermann, 2000) describes practical work to repair relevant parts of cabs, but gives no values for the improvements likely to be obtained.

2.3.2 Self propelled harvesting machines: The average noise exposure for workers operating self-propelled mobile machinery exceeded 85 dB(A) for all combine harvester categories, potato and sugar beet harvesters, self-propelled forage harvesters, swathers and pea viners, generally fitted with cabs. The beet harvesters gave rise to the greatest noise exposure at 91 dB(A). Early combine harvesters were not fitted with cabs and there are still a number in use. Early cabs fitted to combine harvesters and other mobile machinery were not effective Q-cabs, but rather weather protection cabs. The continued use of this type of cab cannot be ruled out. No further, more recently published literature has been found which indicates likely current noise exposure levels for this type of machinery.

2.3.3 Tracklaying tractors: The 1985-7 survey encountered tracklaying tractors of a wide age range, both with and without cabs, which gave rise to average noise dose exposures of 96 and 98 dB(A). This range includes some new tracklaying tractors which were found not to have cabs. Generally, the vehicles encountered had weather cabs only, mounted directly to and/or around the transmission casing. Again, no further, more recently published literature has been found which indicates likely current noise exposure levels for this type of machinery. Fitting Q-cabs retrospectively on old types of this machine is problematic, because of the control levers for steering and other mechanisms.

2.3.4 PTO-powered machinery: Trailed or mounted machinery that is powered by the tractor PTO, gives rise to noise levels that are effectively attenuated by a closed Q-cab. However the values of average dose exposure in the 1985-87 survey for many types of the trailed, PTO-powered machinery (see Appendix 1) exceeded 85 dB(A). In the cases of forage harvesters, disc mowers, and balers, where the average noise exposure ranged from 87 to 91 dB(A), this was indicative of operating the machinery with either window or doors open in warm weather for thermal comfort. In a limited study of comparing noise levels while operating trailed machinery with the cab open or closed, Stiles *et al.* (1994) found differences of between 7.6 and 12.6 dB(A) for disc mowers (average maximum of 93 dB(A)), which are comparable with the results of Talamo *et al.* (1988). The noise exposures for rotary cultivators measured in both of these two studies were also similar at between 82.5 and 85. dB(A). However, Talamo *et al.* (1988) found that noise exposure from forage harvesters were on average 3 dB(A) more than those measured by Stiles *et al.* (1994), with the cab open. In other instances, where secondary cultivation equipment was used (e.g. rotary harrows), the rear window was occasionally left open to gain visual inspection of the results, despite the dust that was sometimes created.

Other tractor mounted machinery, such as hedge cutters, was often mounted on small to medium size tractors, frequently fitted with weather cabs, which afforded protection from flying debris. A great deal of this equipment has increased in size, which necessitates mounting on a larger tractor, which are generally fitted with Q-cabs. The increase in size of trailed, PTO-driven equipment such as high-density balers and trailed sugar beet harvesters, also has necessitated the use of larger tractors, generally fitted with Q-cabs. While the average noise dose from tractor mounted sprayers and trailed seed drills surveyed in 1985-7 were below 85 dB(A), these have increased in size and frequently use pneumatic systems to assist application of spray or to effect seed transport. No information to quantify the noise dose from such equipment has been found.

2.3.5 Orchard sprayers: An exception to the above are air-assisted or air blast orchard sprayers. These use axial fans to propel spray droplets into fruit trees and other orchard / vineyard crops. Because of limited inter-row width and overhanging foliage, narrow tractors fitted with weather-shield cabs, are often used. Consequently operator exposure to noise is high, an average noise dose of 97 dB(A) having been measured in 1985-7. Although current narrow tractors can be fitted with Q-cabs, the space inside is very restricted, making it difficult for the operator of an orchard sprayer to carry out his job effectively. For that reason it is suspected that the tractors currently used for orchard spraying are not all fitted with Q-cabs.

2.3.6 Vegetable cleaners: A number of agricultural operations depend upon manual recognition and labour to identify and remove foreign bodies from crops such as clods and large stones in harvested sugar beet. These operations require the conveying of the crop on web belts in order to remove excess soil and to see and remove the foreign bodies. The noise generated by the drive to the belts has resulted in noise exposure doses as high as 104 dB(A) to the operators working on these machines, who are generally only shielded from the weather.

Although the number of this type of machine that are manned may be relatively small, they are still manufactured.

2.3.7 Horticultural machines: A number of horticultural machines in the 1985-7 survey were encountered in local council amenity services. Rotary mowers caused the greatest noise exposure, doses of 87 dB(A) for pedestrian operated to 92 dB(A) for ride-on machines being measured. With increasing diversification in agriculture, to attract the urban population to the countryside, more horticultural machines are likely to be used by farm workers. However, the time spent using them is likely to be small.

Some machines used in market gardening activities gave high noise exposures, including a hoe-cultivator and a potato lifter, at 88 and 93 dB(A) respectively. However, these two machines were used for short periods and had insignificant effect upon the daily noise exposure dose. Growth in organic enterprises and niche market specialists during the last decade, have probably increased the use of horticultural machinery. No information to quantify the noise dose from horticultural machinery currently in use has been found.

2.3.8 Wood chippers: Wood chippers were not examined during the 1985-7 survey. They have proliferated in domestic, amenity, forestry, highway and agricultural environments. Lines and Lee (1991) made noise measurements on a wood chipper, powered by a 13.4 kW engine, when chipping lengths of yew, 50x50 mm in cross section. Noise pressure levels approximating to the position of an operators ear were 120 dB(A) when chipping wood at maximum engine speed, and 101 dB(A) without wood engaged in the machine.

2.3.9 Mobile saw benches: Mobile saw benches may be tractor powered, or stand-alone units powered by integral diesel engines or electric motors. The latter are restricted in their mobility, but are very much quieter. Operator ear position working sound pressure levels have been measured at 100 dB(A) for a diesel powered unit and 92 dB(A) for an electrically powered unit (Stayner, private communication).

2.3.10 Man-carried machinery: The noise generated from man-carried machinery is mainly generated by a two-stroke petrol engine in close proximity to the operator. The average noise exposure doses ranged from 90 dB(A) for blower/dusters, 94 dB(A) for hedge cutters and 101 dB(A) for chain saws. It is unlikely that these values will have changed much since the 1985-7 survey.

2.4 LIVESTOCK

2.4.1 Cattle feeding: The noise exposure dose of 88 dB(A) during cattle feeding primarily resulted from the noise emitted from feeder wagons.

2.4.2 Pig husbandry: Pig vocalisation noise levels measured in the 1985-7 survey of 89 dB(A) compare with those recorded by Talling et al. (1998), although the latter's measurements of noise did not use the 'A' weighting. Crutchfield and Sparks (1991) reported on noise in pig breeding and growing facilities in Scandinavia, where the noise levels between the feed alleys ranged from 95 to 104 dB(A) for two 45 minute periods per day. The noise levels generated by the power units of high pressure cleaning sprayers on the pig farms ranged from 98 to 105 dB(A). Many pig farms use permanently installed pressure lines for high pressure cleaning sprayers, so the noise generated will be considerably less. Estimates of exposure time for pressure cleaning range from 1 to 3 hours a week.

2.4.3 Milking parlours: Although milking parlour noise exposure measured in the 1985-7 survey was low, only one sample was taken. There is no reason to suppose that it is not typical of milking parlours in general.

2.4.4 Seasonal turkey production: The average noise exposure from turkey dry pluckers was found to be high at 99 dB(A), and probably in part originates from the fan used to blow feathers away from the machine. These machines are still manufactured for farm gate sales of turkey, although locating this machinery is proving to be difficult, as a significant proportion of birds are plucked by hand. High levels of noise exposure were also experienced in turkey housing at 94 dB(A) and was most likely to have arisen from turkey vocalisation.

2.4.5 Farriers: Farriers were not examined during the 1985-7 survey. Although it is arguable that they are generally associated with the agricultural community, it may be more appropriate to class them with the leisure industry that encompasses other activities outside agriculture. However, noise measurements of hammering on anvils during final shoe fitting ranged from 98 to 120 dB(A), with the majority of readings above 108 dB(A). The ringing of an anvil was considered to be a continuous noise, as the hammer blows were less than a second apart. Up to two hours a day were spent shoeing horses, without the use of hearing defenders (Crutchfield and Sparks, 1991).

2.5 IDENTIFICATION OF POTENTIAL EXAMPLES FOR NOISE REDUCTION TREATMENT

The first stage in identifying example noise sources for demonstration of approaches to noise control, has been to rank all those considered above (see Appendix 1), approximately according to the estimates of operator $L_{EP,\,d}$ (see Table 2). This does not include any weighting for the likely numbers associated with any of the types of source. The sources included in Table 2 will subsequently be reviewed in relation to their suitability for noise reduction treatment (see Section 4).

Table 2 Potential noise problems, ranked according to 8-hour equivalent dose

Rank number	*Task/Machine description*	*$L_{EP,\,d}$ (dB(A))*	*See Section ...*
1	Worker on machine: Sugar beet cleaner/loader	104	4.2
2	Man-carried machine: Chain saw	101	4.3
3	Livestock: Turkey plucker	99	4.4
4	Tracklaying tractor, high speed	98	4.5
5	Tractor with field machine: Orchard sprayer	97	4.6
6	Tracklaying tractor, low speed	96	4.5
7	Grain drier: Cross flow	96	4.7
8	Feed preparation: Roller/crusher mill	95	4.8
9	Livestock: Turkey house	94	4.4
10	Man-carried machine: Blower/duster	94	4.9
11	Hop machinery: Cleaner/picker	94	4.10
12	Tractor with field machine: High density baler	92	4.11
13	Grain drier: Cascade	92	4.7
14	Vegetable packing shed: General operating area	92	4.12
15	Tractor with field machine: disc mower	92	4.11
16	Self-propelled machinery: Sugar beet harvester	91	4.11/4.2
17=	Crop drier (Green crop)	91	4.7
17=	Self-propelled machinery: Sprayer / digger / dumper	91	4.13
17=	Tractor with field machine: Straw chopper	91	4.11
20	Workshop: Angle grinder	91	4.14
21=	Tractor with field machine: Hedge cutter	91	4.11
21=	Tractor with field machine: Sugar beet harvesting	91	4.11/4.2
23	Tractor with field machine: Trailer transport and ploughing	90	4.11
	Wood chippers	101-120*	4.15
	Mobile saw-bench	92-100*	4.16
	Pig feeding	89	4.17
	Cab deterioration	-	4.18

* L_{eq} values

3 NOISE REDUCTION TECHNIQUES

In this section there follows a brief outline of the most common noise reduction techniques and strategies, followed by a discussion how these have been enhanced by recent developments. There is also included an indication of what is available commercially, a discussion of what techniques are likely to be compatible with agricultural conditions, and finally a summary of techniques likely to be relevant to the control of noise on farms.

3.1 BASIC CONTROL TECHNIQUES OR STRATEGIES

All noise reaches the human ear through the air, but in the course of transmission to the ear there are two possible phases: airborne and structure borne, and each requires separate control strategies and products. The available methods of noise reduction, which apply to both airborne noise and to structure borne noise, may be listed as follows:

- Reduction at source
- Sound Barrier
- Vibration reduction
- Sound Absorption
- Silencers (special use of absorption)
- Active cancellation

There are in addition special types of product for dealing with noise in hydraulic and pneumatic systems, which may not be considered here.

3.1.1 Reduction at source

Ideally the source of the noise problem should be designed out of the machinery when developing the machine in the first instance. However this is not always a commercial consideration, as noise reduction can involve higher costs and is usually only applied when the legislation requires certain limits. Also noise is often found to be a problem when the main design parameters have been chosen and it is too late to make the desired changes to the source. An example of noise reduction in the design stage is the selection of fans for low noise and in particular identifying where axial flow fans can be replaced with centrifugal type fans.

3.1.2 Sound barrier (airborne noise)

The purpose of sound barrier materials is to reduce transmission of airborne noise. Barrier materials may include wood, metals, glass, concrete and plastic or composite sheet, the choice depending on the industry or application involved. The denser the material, the more the sound transmission is reduced. The ideal material would be in the form of a dense, non-resonant sheet, sometimes described as a "limp mass". To provide maximum acoustical effectiveness it is necessary for the enclosure to be as well-sealed as possible - if an enclosure is formed with 10%-15% open for noise transmission, up to 50% of the generated noise will escape. Where total containment is not possible, the placement of the barrier in direct line of sight between noise source and receiver is the next best alternative.

3.1.3 Vibration reduction (structure borne noise)

Structural borne noise can be a major problem in mechanically connected or welded machinery and structures. It can be treated by either isolation or damping, or a combination of both. Isolation involves use of mounts or pads to de-couple the vibrating source from the surrounding structures, thereby preventing energy from being transmitted to other locations from which it can be radiated as airborne noise. Common applications are engine mounts in cars, other vehicles and machines powered by internal combustion engines, and cab mounts for tractors and other vehicles. Designs of mount include rubber-in-shear, spring type or moulded polyurethane elastomer.

Damping refers to the process of removing vibration energy from stiff panel surfaces, such as sheet metal, wood or reinforced plastics. Drumming and ringing noise is reduced by applying sheets of damping material to selected locations, such as car door panels, boat hulls or bulkhead areas. Damping sheets can also be sandwiched between layers, e.g. of plywood, to make a quiet construction panel, sometimes known as "constrained layer" damping. Because isolation treatments are only partially effective, damping is often required to achieve desired noise and vibration reductions.

3.1.4 Sound absorption (airborne noise)

Sound absorption is a means of using materials to reduce reflected noise and hence reverberant build-up. Porous materials such as foam or fibreglass, soak up the noise inside tractor cabs and similar applications. Wood-wool, perforated panels and panels with backing voids perform a similar function in building construction. However, in room acoustics, it is often the furnishings that provide most of the absorption. Absorbent materials are best used in close proximity to the sound sources and are not effective for transmission reduction, i.e. they should not be used as shields, barriers or enclosure walls.

3.1.5 Silencers

Silencers or mufflers are a special case of absorption and reduce acoustic pressure fluctuations in streams of air or other fluid. There are two basic types of silencer: absorptive and reactive. Absorptive silencers reduce reflections from the walls of the tube or duct that contains the stream of fluid, and may be augmented by additional "splitters" placed within the stream. Reactive silencers depend on the reflection or expansion of sound waves with self-destruction as the basic noise-reduction mechanism.

Automotive applications, such as car or tractor exhaust systems, usually use a combination of both absorptive and reactive techniques. Heating, ventilation and air conditioning (HVAC) systems use absorptive, duct silencers which are incorporated in bends and louvers, and which may be applicable to fan and airflow noise in farm building applications.

3.1.6 Active cancellation

The idea of generating sound whose pressure fluctuations are directly in opposition to a received noise has been tested in various applications for some years. It works best where there is either a source that approximates to a point source, or a single receiver, so that the measured sound pressure can be reproduced accurately. It is relatively complex, involving system components for measurement, computation and sound generation. Applications in agriculture have been investigated by Silsoe Research Institute without much success (Talamo & Peachey, 1985).

3.2 RECENT DEVELOPMENTS IN NOISE CONTROL PRODUCTS AND TECHNIQUES

Throughout the last few decades, growing interest in controlling noise, be it in the built environment, for greater "quality" in cars and other consumer products, or for worker protection, has led to continuous improvement in the materials and components available for its achievement.

3.2.1 Barrier materials

One particular development in the field of barrier materials to reduce transmission of airborne noise, has been in heavy, flexible sheet material, in which high mass density is achieved without the use of lead loading. This does not make the material significantly more effective than lead-loaded sheet, but it makes it both cheaper and safer. There have also been developments in mouldable barrier materials.

3.2.2 Absorbent materials

Production quality has steadily improved the consistency of foam materials, but of equal or greater practical significance has been the improvement in methods of applying partially porous "skins", often by melting into the surface instead of glueing on. A common disadvantage of earlier types of absorbers with perforated covers was that the glue blocked the perforations, rendering the entire material quite ineffective. In the built environment, there are now some spray-on materials which, while not having great efficiency, especially at low frequencies, do make a significant contribution to reducing reverberation, if they can be applied over large areas.

3.2.3 Materials for panel damping

More effective panel damping, and better resistance to environmental influences, have been achieved through developments in chemical engineering, particularly increasing the loss factors of the materials, and improving the quality of adhesives.

3.2.4 Composite materials

Materials are now available that combine layers of barrier, damping and absorbent material, in thicknesses that can be tailored to suit many applications. These make the construction of noise enclosures more effective, and improve partial treatments of machines in many ways.

3.2.4 Seals

Sealing strips for doors and other openings in enclosures, cabs, etc. have also been improved by advances in chemical engineering. These have provided softer sections, for better sealing, that are also more durable than in the past. Used in conjunction with appropriate structural components, they can greatly improve the efficiency of noise enclosures.

3.2.5 Vibration isolation (anti-vibration mounts)

For automotive use, such as mounts for engines or tractor cabs, where elastomers are still favoured, developments have included the addition of internal damping in which fluid is pumped between two moulded chambers, and the use of secondary or two-stage systems. Both of these can be tuned to increase efficiency at selected frequencies. Mounts for large machines may be combinations of steel, rubber or air springs with fluid damping. They can also include levelling facilities for sensitive machinery. The main advances are in fact the availability and selection of the most appropriate mounts, rather that any specific technology.

3.2.6 Silencers

The basic techniques for silencer design have been known for many years. Improvements have generally resulted from the availability of materials (for absorption types) that are more durable, or have more consistent properties.

3.2.7 Hydraulic and pneumatic systems

These have been the subject of focused R&D over the last 2 or 3 decades, resulting in knowledge of how to eliminate internal sources of noise, e.g. by better design of valves and the development of specific components such as silencers for air outlets.

3.2.8 Better by design

In many applications, noise reduction has in the past been hampered by shortcomings of the machine or equipment in question. Vibration can be transmitted along control linkages and hydraulic pipes; airborne noise can be difficult to stop if there are many existing points of entry into an enclosure for different services, and the poor location of noisy components near to the operator can all limit the potential for improvement. By taking factors such as these into account at an early stage of design, it is often possible to make better use of the specific materials that are available for noise reduction. This is one of the advances that have been taking place in recent years.

There have been advances in the field of building and civil engineering, by sealing, isolation and reduction of flanking noise paths, a good example within agriculture has been the development of tractor cabs. Over a 25 year period they have improved from a situation where 90 dB(A) could just be achieved at the driver's ear, to one in which 70 dB(A) is now possible. As outlined below, contributory factors have been:

Isolation materials: The cab needs isolation mounts to prevent noise being transmitted from engine and transmission directly into the cab enclosure. These are normally elastomers, but for better efficiency, composite designs are sometimes used with internal fluid damping. The structural design of the chassis and cab are considered, in the specification of isolation mounts, to optimize the mechanical impedances and so maximize mount efficiency.

Barrier materials: Panel surfaces inside the cab are covered with mass-loaded rubber mats to minimise transmission via this route. The panels themselves are designed to eliminate resonance at normal excitation frequencies.

Seals: Door seals are particularly important for preventing the ingress of sound. The improved performance of materials, as described above, is further enhanced by better quality control during production, which results in more consistent widths of gap to be sealed, and the use of steel sections that treat sealing strips favourably. Windows which are not required to open (e.g. car rear three-quarter), can be bonded in place, thereby optimising the seal between different sections of the vehicle structure.

Damping compounds: Damping compounds are used in conjunction with structural methods of eliminating panel resonance, on the larger cab panels, and also within the under-bonnet area. Under the bonnet, and below the cab, they may be combined with absorbent layers to control reverberant amplification.

Absorption materials: These are actually used more sparingly than in early Q-cabs, because of the success of the techniques mentioned above. Surface or cover material have changed from perforated PVC, which was often not as effective as it should have been in reducing in-cab reverberation, to actual or simulated cloth. Low frequency absorption has been enhanced by means of internal roof panels with backing voids.

3.3 COMMERCIAL PRODUCTS FOR APPLICATION IN OTHER INDUSTRIES

In parallel with the advances in materials and control techniques, and reflecting the growth of the market for such products, there has been an increase in the number of suppliers. The Buyer's Guide of the Institute of Acoustics includes over 100, mostly UK companies offering everything from basic materials for absorption, barriers, panel damping and seals, to full installation of acoustic cover systems with built in silencers for cooling air flow. In the UK there are probably as many more companies that are not in this particular guide.

Many of the leaders in noise control are based in the building or architectural contracting, aircraft and car sectors, where there are not only legislative requirements to reduce noise levels, but pressure from the consumer requiring a quieter product or environment. Typically a company may specialize in one or two products, such as a heavy, limp mass barrier sheet and a composite of the same barrier sheet with an absorbent or soft "scrim" layer and a layer of aluminium foil. The former is marketed for use as roll-away curtains, and cross-talk barriers; the latter for pipe and duct lagging and for lining equipment enclosures.

Some companies specialize in "conversion" of open and closed cell foam. This may be combined in layers with barrier and damping sheets, for lining engine compartments, equipment enclosures or vehicle cabs. It may be formed into wedges for use in recording studios, or it may be covered, e.g. with cloth, and made into suspended units for wall panels or hanging baffles, for use in a wide range of rooms from auditoriums to manufacturing plant. Other suppliers specialize in the design and fabrication of enclosures, maybe with their own particular materials or components, but generally offering steel sheets on a framework, with absorbent lining, seals for openings, and sometimes optional vibration isolation.

3.4 COMPATIBILITY WITH AGRICULTURAL CONDITIONS

The most common type of noise control actually found on farms is the tractor Q-cab, available for all new tractors since 1976. Elements of the design and construction of these are obviously applicable to other self-propelled machines. A very suitable noise control material that is available on farms, at least for temporary use, is the straw bale. Bale stacks provide a combination of high transmission loss and broad-band absorption, and have been used successfully to enclose mobile, diesel-powered drying fans, and to reduce environmental nuisance for several decades. The drawbacks are that they suffer from degradation from weathering and vermin, and they are combustible. Such disadvantages also may apply to many of the materials and components that could be transferred from other industries, together with the adverse effect of other attributes of farm conditions, such as effluents which, although not strongly corrosive, do attack many materials over the medium to long term. Nevertheless, there are several examples in which industrial style enclosures, for either machine or operator, could be useful. These might include providing control rooms in large drying installations, or covers for engines or drive trains close to operator stations on some larger machines.

The handling of materials, such as produce impacting on chutes, is little different from similar situations in other industries, in which instances noise reductions can be made by attaching materials that provide panel damping and reduction of the efficiency of panels as radiators of sound. The use of porous acoustic absorbers could be limited by the fire risk, particularly in conditions in which they may attract dust, such as in drying and milling / mixing installations, and by the needs of hygiene in food processing areas. However, with suitable choice of cover materials now available, they could be useful in highly reverberant situations. They could also be useful in the large silencers needed for the high volume fans found in some installations.

There should be no problems in using industrial anti-vibration mounts, where appropriate, in farm conditions, and these are generally not expensive items. On the other hand, the cost and complexity of active cancellation systems places these beyond consideration for agricultural applications at their present stage of development.

3.5 SUMMARY OF RELEVANT TECHNIQUES

Techniques or strategies likely to be useful in combating operator noise exposure in on-farm conditions include the following:-

a) Noise enclosures for source or operator, including partial barriers or baffles;
b) Refurbishment of cabs of mobile machines (including older tractors);
c) Anti-vibration mounts in extensive machine structures;
d) Vibration damping on panels, chutes etc;
e) Reverberation control e.g. in processing halls, packing sheds;
f) Pneumatic system design, components;
g) Silencing for fans.

4 ASSESSMENT OF EXAMPLE NOISE PROBLEMS

4.1 GENERAL APPROACH

A number of work environments have been identified above for which daily noise exposures ($L_{EP,d}$) have been estimated to exceed 85 dB(A). In the following sections, each of these is reviewed, initially to suggest a suitable approach to reducing operator noise exposure. Factors affecting the cost of the appropriate treatment, and the likely benefit are also discussed, with particular reference to technical feasibility, economic considerations and practicability in an on-farm situation. Each situation is also categorised according to whether the proposed solution is either one which is already familiar in the farm context, or whether it is familiar in other industries and could be applied in agriculture. A third category contains those examples for which no practical noise reduction solutions can be proposed, and for which the use of Personal Protective Equipment (PPE - Hearing Defenders) remains the only viable approach.

4.2 SUGAR BEET CLEANER / LOADERS AND POTATO HARVESTERS / GRADERS

Although these are apparently different machines, and include both stationary and mobile designs, the operating principles are similar, as are the noise sources. One particular example of sugar beet cleaner/loader (similar to those shown in Figure 5), generated enough noise for an operator $L_{EP,d}$ in excess of 100 dB(A) to be estimated, although levels of 88-91 dB(A) may be more usual (see Appendix 1). The main noise sources are the engine, which is usually a separate unit, distinct from the motive power for locomotion, and the conveyor flights and their drive mechanisms. The latter are believed to be the principal source in the noisiest example encountered during the 1985-87 survey.

Treatment for the engine noise can be by improved exhaust silencing, in conjunction with cover panels that provide better absorption and increase transmission loss over the basic elements usually provided. This follows the techniques used on mobile compressors, and may use similar materials. Treatment of particularly noisy conveyors and their drives may be more difficult. Substitution of materials, although initially attractive, may be impractical because of the highly abrasive conditions in which these machines sometimes have to operate. This leaves the possibility of baffles between the main sources and the operator positions. The practicality of this will depend on the layout of specific machines, and needs further investigation.

Both of these approaches could be applied using farm workshop facilities, as long as information was available on sourcing materials. The effectiveness cannot be predicted without further knowledge of the specific machines. The material costs would be small in comparison to the cost of the machines themselves, probably only a few hundred pounds at most. As indicated, both approaches can be categorized as transfer of expertise from other industries.

4.3 CHAINSAWS AND BRUSH-CUTTERS

These can generate sufficient noise for a daily exposure to approach, or even exceed 100 dB(A). The main source of noise is the two-stroke engine, and although electrically powered machines may be substituted in some locations, in most situations the portability and independence of engine-powered units is an overriding advantage. Neither alternative forms of engine, nor more effective silencing can be achieved without making the machines unacceptably heavy and bulky. Direct practical solutions are therefore not technically feasible, and the mandatory use of PPE for eye protection leads naturally to the use of hearing defenders for ear protection.

Figure 5 Sugar beet cleaner/loaders with manned pick-off platforms

4.4 TURKEY PLUCKING MACHINES AND NOISE IN TURKEY HOUSES

Daily noise exposure in at least one case of mechanical turkey plucking was nearly 100 dB(A). Unofficial estimates suggest that perhaps 20% to 30% of farm producers use these machines in preference to hand-plucking. Use of hearing defenders in what must be a dusty environment is even more unattractive than in most other cases. If the major noise source is the air blast, used for removal of loose feathers, then shrouding or the use of pneumatic silencers could provide a significant improvement. Shrouding could also provide a solution if the gearing to the pinch rollers is a major source of noise. This need not be costly, and would be an example of transfer of technique from other industries. It is difficult to envisage a solution to the vocalization noise within turkey houses.

4.5 TRACKLAYING TRACTORS

New steel tracklaying tractors are available with the option of cabs, which have some noise reduction. Fitting a cab retrospectively to an older steel-tracked machine could be a difficult task. This is not considered a practical example. The majority of new tracklaying machines sold in the UK are very large, high power machines fitted with rubber tracks (e.g. Caterpillar / Claas Challenger). These machines are fitted with cabs embodying similar levels of comfort to those found in wheeled tractors of similar size.

4.6 AIR-BLAST (ORCHARD) SPRAYERS

These machines, illustrated in Figure 6, have been found with daily exposure as high as 97 dB(A). The dominant noise sources are the air blast nozzle and high speed fan blades. Two possible solutions suggest themselves for this type of equipment. The simpler is a basic noise baffle, mounted at a suitable point on the machine, to reduce direct radiation towards the operator. Of more technical interest is the design of the air-blast outlet for smoother airflow. With regard to technical feasibility, the former might be restricted by the low profile required for these machines to pass amongst tree rows, whereas the potential for the latter is an unknown quantity. Both solution would be relatively inexpensive, however, although the former should be relatively easy to construct on-farm, the latter requires technical development that would be well beyond the scope of a purely farming enterprise.

The use of a simple noise baffle is probably best categorized as being "imported" from other industries. However, experiment may show that it does not provide adequate protection, and in that case the use of PPE (Hearing Defenders) again provides the only realistic protection.

Figure 6 Tractor and air-blast orchard sprayer

4.7 GRAIN DRIERS

These have been found with daily exposures between 86 dB(A) and 95 dB(A). The addition of silencers to the fans, in this application, is unlikely to make a major contribution to operator protection because of the high level (above ground) of the fans themselves (see Figure 7) but would be relevant to controlling environmental nuisance factor. The operator exposure arises from a multiplicity of sources, including burners, grain handling equipment, and to a smaller extent the fans. It is only in those cases where an operator is permanently assigned to control and monitor the plant that there is likely to be excessive noise exposure. In these cases, the most appropriate method for reducing operator exposure is likely to be by providing an enclosure for his main work station, to act as a control room and office. The required noise reduction is of the order of 10 dB(A). The frequency spectra provided by Talamo & Stayner (1972) suggest that this can be provided by a simple "portacabin", or good quality garden shed. An enclosure of better quality, giving more noise reduction, might give the operator greater incentive to close the door, and therefore to obtain the potential benefit.

This solution is clearly quite feasible from a technical point of view, and costs could be quite modest. The enclosure itself could cost a few hundred pounds, less if obtained second hand. A possibly greater cost would be the relocation of electrical services for the controller into the enclosure. This solution would be quite practical in most grain drying installations. It is probable that this type of solution is actually found in the better installations, in which case it may be categorized as familiar in farm situations. It is certainly common in other industries.

Figure 7 Large, continuous-flow grain drying installation

4.8 ANIMAL FEED PREPARATION MACHINERY (MILLING / MIXING PLANT)

The basic elements of hammer mills and roller mills, as used for cracking and crushing cereal grains for farm animal feed, are inevitably sources of noise and, where workers have to be in the vicinity of such machines, daily exposures can be as high as 95 dB(A). The possibility of enclosing the machines is of limited application because of the potential risk of concentrating an combustible dust, but nonetheless may be worthy of consideration.

In general, there is no requirement for continuous, close supervision of these machines, which often run unattended for long periods. Therefore simple modifications such as removing switches and controls to positions that are shielded from direct noise radiation, can be used to reduce residual exposure. Also, if bagging-off is required, it should be possible to arrange for this to be done through a wall or other form of acoustic shield. These are techniques that should be practicable in the farm situation. In the case of large installations that do require continuous manning, the approach of an enclosure for the operator as for grain driers (see Section 4.7) should be contemplated.

4.9 MAN-CARRIED MACHINE – BLOWER DUSTER

In common with other portable powered machines where the power source is a light, 2-stroke internal combustion engine, there is little that can be done without rendering the machine impracticable. PPE is probably the best solution unless an alternative to the activity itself can be found.

4.10 HOP MACHINERY (PICKERS AND CLEANERS)

An example of these machines has been found that exposes the operator to an estimated $L_{EP,d}$ in excess of 93 dB(A) (see Appendix 1). It is understood that the main source of noise is the pneumatic conveying. This may be amenable to treatments by baffles or by modifying air nozzles to reduce noise from expansion or turbulence.

The potential noise reduction cannot be estimated without more detailed knowledge of the machines, but the techniques should be directly applicable from other industries, and should not involve large items of expenditure. In relation to reducing airflow noise directly, some research time may be needed to identify the relevant techniques and sources of materials or components used in other industries, but this investment would not affect the eventual on-farm costs.

4.11 TRACTOR PTO-POWERED MACHINERY

Forage harvesters are probably the noisiest machines to be used immediately behind tractors. Other potential candidates include disc mowers and power harrows. These do not pose any problem as long as the attached tractors are fitted with effective "Q-cabs" and are used with the rear windows closed. Historically, direct mechanical controls required that the rear window be open (see Figure 8), but modern practice is to use remote electric or hydraulic controls, and there is no need for this.

It may be that an instructive example could be made by showing the effect, on operator noise exposure, of closing the rear window when using these machines. Cost of "solution" would be nil, and the method is clearly both technically feasible and available on the farm. (See also Section 4.18: *"cabs of mobile machines with inadequate or damaged acoustic materials"* below).

Figure 8 Tractor PTO-powered trailed forage harvester with mechanical controls

4.12 VEGETABLE PACKING SHEDS

Vegetable packing sheds have provided estimates of operator $L_{EP,d}$ ranging from 85 dB(A) to 92 dB(A). The noise sources are potentially many and diffuse, and it is probable that individual exposures are raised by the effect of having a number of machines operating together within a large, reverberant building (see Figure 9). If this is the case, the solution is to apply techniques well-known in the manufacturing industry, involving location of individual machines (where practicable), introduction of noise screens, and application of absorbent material or panels, e.g. suspended in ceiling spaces, to reduce reverberant build-up. These methods would have to be tailored for specific enterprises, but would be both technically feasible and reasonably cost-effective.

There is also a suggestion that air-blast selection and cleaning of some crops could raise the exposure levels at some work stations. If that is the case, the solution of localized baffles, together with aligning the nozzles away from operators may be practicable. It should be noted that noise from these devices can include very high pressure pulses. However, radiation from them can also be strongly directional, and therefore operator exposure can be controlled relatively easily.

In this case we have the possibility to transfer expertise from other industries that is technically feasible and inexpensive to realize.

Figure 9 Potato grading / packing hall

4.13 SELF-PROPELLED MACHINERY: SPRAYER / DIGGER / DUMPER

This case is thought to have been dominated by a dumper, which is outside the present area of interest, being essentially an earthmoving machine.

4.14 WORKSHOP ANGLE GRINDER

This is considered to be a tool for which PPE, in the form of eye protection is essential, and for which ear defenders would be the best available solution at present.

4.15 WOOD CHIPPERS

We do not have $L_{EP,d}$ values for wood chippers, but operator's ear noise can reach 120 dB(A) when operating. The main noise source is the chipping action itself, magnified by resonance of the enclosing panels. It is not clear what proportions are directly radiated from the feed opening and what from panel radiation. However, assuming the latter is the more important, there is potentially some benefit to be had from the application of damping material to the exterior of the panels, possibly enhanced by a second, outer layer of steel sheet to provide "constrained layer" damping.

Material costs would be low, and the method could be applied on the farm. However, the effective noise reduction is unlikely to be sufficient to bring operator $L_{EP,d}$ below 85 dB(A). In that case PPE (Hearing Defenders) would be the necessary solution. The damping method could be categorized as applying an approach from other industries, but it may be that we cannot propose a full practical solution.

4.16 MOBILE SAW-BENCHES

Noise levels at the operator's ear for these machines range from 92 dB(A) for electrically powered units, to 100 dB(A) for diesel powered units. These are L_{eq} values during typical work cycles. There are therefore two main sources for the diesel machines, only one of which is relevant in the case of the electrically powered units. These are (1) the radiation from the saw blade itself, and (2) diesel engine noise, itself made up of exhaust noise and combustion noise radiated directly from the engine structure.

The solution of a hinged hood to cover the blade has a value that is limited by the need for access to feed the material, which is generally logs that may be fed longitudinally (for splitting) or transversely (for cutting to length). In either case, the hood would remain open in the direction of the operator. The diesel type of unit could be replaced in workplaces with electrical supply, but would still be required for operations at more remote sites, common in forestry, and not uncommon on farms. Improved exhaust silencing and acoustic panel covers could probably bring the operator ear noise level down to approximate to that of the electric machines. However, there would remain a requirement for hearing defenders, and as PPE is required for these machines in any case (face masks or eye protection), it is not clear that a direct solution is feasible.

4.17 PIG HUSBANDRY

Pig feeding is almost unique in farming operations, being one in which very short exposures only once or twice a day can lead to $L_{EP,d}$ values of 90 dB(A). The source, although being the vocal chords of the pigs themselves, is in fact set off by the arrival of the human presence. The solution, proposed 30 years ago (Talamo, private communication) was to provide feeding by mechanical delivery. Whether this should be *ad-lib* or to a timed programme is a matter for animal husbandry. The solution is technically feasible, and uses techniques well-known in farming. Its economic feasibility depends on considerations of animal husbandry. There is a strong possibility that there are examples of what we would propose already in existence on many farms, so the exercise would simply be one of measurement on two farms with different systems.

The exposure component that is associated with the use of pressure washers can possibly be reduced by converting to plumbed systems, instead of mobile units. This could also be tested by finding farms currently using each system. However, with extensive pig units becoming more common, the option of plumbed systems may not be widely applicable.

4.18 CABS OF MOBILE MACHINES WITH INADEQUATE OR DAMAGED ACOUSTIC MATERIALS

Cabs of mobile machines, and some older tractors (see Figures 10 and 11), often provide inadequate noise protection, because of deterioration of, or originally inadequate provision of, the basic noise reduction elements. For example:-

a) vibration isolators can crumble or mounting brackets can distort, leading to metal-to-metal contact;
b) barrier mats can become damaged, or be partially / completely missing;
c) damping materials can fall off, or become partly detached;
d) acoustic absorption materials can also become detached, lose their surface skinning, or become clogged with dirt or oil;
e) doors, windows, or their openings can become distorted, or latches weakened, leading to poor sealing. Also, the sealing strips can be lost or damaged;
f) windows, and even doors can be completely missing.

The refurbishment of an old cab would provide an example with numerous agricultural applications, potentially providing information on sources of material, in addition to methods of use. Such an exercise could be designed to evaluate the noise reduction effects of each of several aspects in turn (see above), utilising an old Q-cab tractor for the exercise.

Figure 10 Deteriorated Q-cab on otherwise serviceable 70hp tractor

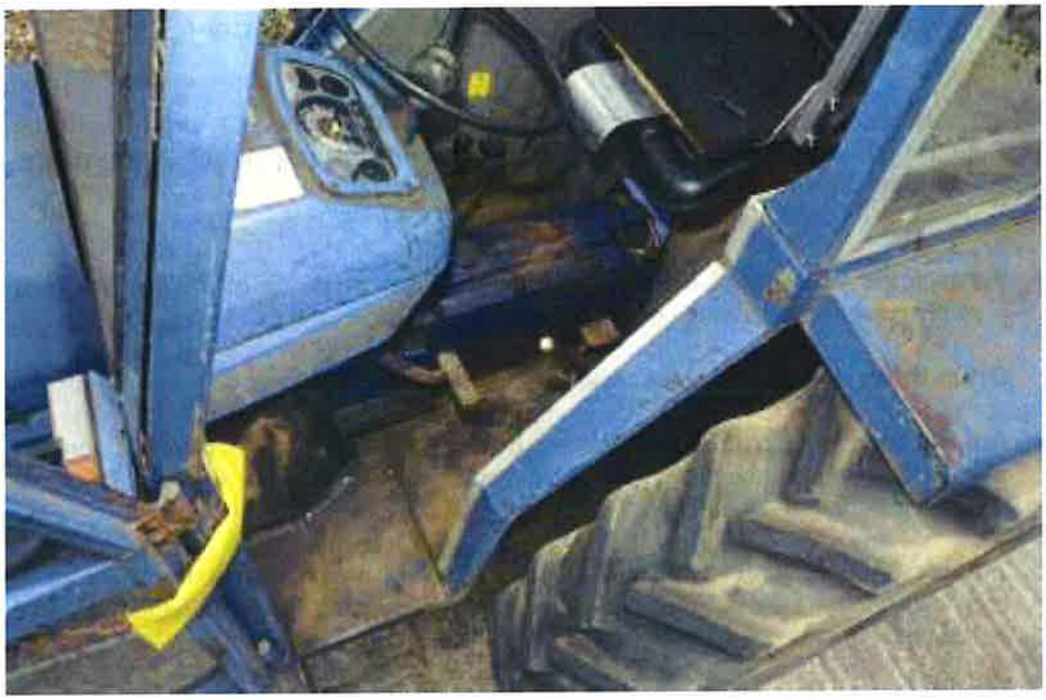


Figure 11 Cab interior showing absence of noise reduction materials

5 NOISE REDUCTION CASE STUDIES

Following consideration of the 17 different examples discussed in Section 4, and consultation with HSE Project Officers, 7 of the examples, deemed the most widely applicable, were selected for practical on-farm demonstration of noise reduction techniques:

1) **Farm-scale potato pre-cleaning / grading line**: Masking of driving gear (and possibly power unit) noise at operators' position;

2) **Grain drier:** Example of noise enclosure for operator's work area;

3) **Animal feed preparation machinery (milling / mixing):** Relocation of controls so that the operator does not need to approach the noisy parts of the installation, or acoustic isolation of the latter;

4) **Tractor (PTO)-powered machine:** This would be a demonstration of the need to keep cab windows closed (and maintain sealing & glazing integrity). One example would cover a wide range of tractor (PTO)-powered equipment;

5) **Vegetable packing shed:** This could be an example of several techniques:-
   - o reduction of reverberation, with suspended absorbent panels;
   - o partial enclosure or shielding of noisy conveyor drives;
   - o optimizing layout of workplaces and noise sources;
   - o shielding or silencing of air-blast nozzles;

6) **Animal vocalisation during feeding**: As the noise source (animals) cannot easily be modified or enclosed this case study would investigate the noise levels / daily noise dose of stockmen working on two similar livestock enterprises, one using manual feeding and one with an automatic feeding system;

7) **Cabs of mobile machines with inadequate or damaged acoustic materials:** A controlled study of the effect of each of 6 components (e.g. replacement of degraded / missing noise reduction materials, cab sealing, anti-vibration mountings, etc).

In accordance with the original investigation proposal, each example was investigated by application of the following methodology:-

1) Location and initial inspection of the (on-farm) noise problem;
2) Detailed measurement of pertinent noise levels prior to treatment, including calculation of worker maximum daily exposure time in accordance with EU PA(N)D;
3) Proposal and selection of an appropriate noise reduction solution;
4) Practical implementation (by SRI personnel), or supervision of implementation (by farm staff), of chosen noise reduction method;
5) Detailed measurement of pertinent noise levels post-treatment, including calculation of revised maximum daily exposure time;
6) Detailed documentation and reporting of the noise problem, the treatment applied, and the degree of success achieved.

As detailed in the following Sections all of the on-farm examples located, apart from the *Farm-scale potato grading line*, displayed noise levels above the action value(s) prior to treatment. As no examples of excessively noisy potato grading lines were located, after extensive investigation, no case study was able to be undertaken for this example.

Two case studies were undertaken as part of the *Animal feed preparation machinery* example, as two individual noise sources were located within the same farm building, both of which were above the noise limit value.

Noise spectra were also recorded for each of the case studies and these are given in Appendix 2.

5.1 FARM-SCALE POTATO GRADING LINE

Initial visits made to three potato growing farms in Bedfordshire, during March 2002, indicated that whilst many small/medium-sized growers were indeed using older, noisy grading equipment, all believed that the size of their enterprises precluded both investment in new machinery and facilities and a long-term future in potato production. Consequently all the growers visited were contemplating alternative crops and/or business ventures and, as no future potato machinery investment was envisaged, it was deemed that these enterprises could not be considered representative of modern potato producers.

An additional number of larger potato growers throughout Cambridgeshire and Suffolk were subsequently identified and visited during May and June 2002, all of these operations involving grading of produce leaving store. However, all premises operated very modern, high capacity grading / handling equipment and no instances of excessive noise exposure were found in the modern facilities encountered, a typical example of which is illustrated in Figure 12.

Believing these enterprises to be somewhat "large" farm-scale operations, possibly due to their geographic location within East Anglia, a number of medium-sized (16 – 40 ha) growers in the Welsh Borders were approached. These farms were grading produce into store immediately after harvesting and indeed were operating equipment which was intermediate, both in terms of capacity and age, when compared with that encountered previously (see above). Harvesting, and therefore noise measurement, was initially delayed by dry weather conditions during September 2002 preventing lifting without excessively high levels of crop damage. Early-October rainfall permitted progress to be made, but the results were disappointing in so much as bystander and operator noise exposure levels were found to be of insufficient magnitude to warrant treatment, even in cases of noisy driveline components. This is possibly a reflection of the fact that potatoes are (in normal seasons) a high value crop, which is prone to mechanical damage during handling. Professional growers are well aware of the need to minimise crop damage in order to maximise retail value. Consequently care is taken to maintain the mechanical condition of crop handling / grading equipment and minimise the severity of physical interactions between it and crop (e.g. drops & impacts). All these factors contribute to a reduction in noise emissions to the levels that we have encountered in this study.

Figure 12 Typical high capacity potato grading and packing line

5.2 GRAIN DRIERS

5.2.1 Introduction

Following visits to four farm enterprises operating continuous flow grain drying systems, one farm was selected, approached, and was prepared to be the subject of a case study. Initial operational noise levels were recorded, albeit without the presence of crop, and potential staff noise exposure levels calculated from known on-site working practices. A package of noise reduction measures was subsequently proposed and accepted by the farm owner.

With the possible exception of very modern, automated plants, on-farm continuous flow grain drying installations usually require the permanent presence of an operator, if only to identify and rectify system malfunctions. The same person would normally also monitor and record the delivery of grain to the installation. Principal sources of noise in such situations include the drier burner units, associated grain handling equipment (elevators, conveyors, augers) and, to a smaller extent, the drier fan(s). A popular means of operator noise protection is the provision of an operator cabin, to act as an office and work station, frequently sited within the building which contains the drier. This primitive solution can in fact be a very effective method of reducing operator noise exposure.

A form of operator cabin was indeed present at the case study farm, but its acoustic effectiveness was severely reduced due to the absence of a suitable door. This was due to a combination of practical limitations and the personal preference of the drier operator / farm owner, but, upon further investigation, the issues restricting implementation of a noise reduction solution were identified and suitable solutions found. The main restriction was the drier operator's desire to identify system problems, audibly from his work station / office - hence the absence of a door on the cabin. The most frequently occurring problem was excessive supply of grain to the drier, an occurrence identified by the flow of excess grain back to the reception hopper via an overflow duct. This grain flow could be heard by the operator, thereby prompting remedial action. The problem was solved by installation of a simple microphone / loudspeaker system between the grain overflow duct and the operator workstation. The acoustic (noise reduction) effectiveness of the operator cabin was subsequently improved by additional sealing and provision of a door, reducing interior noise levels and operator noise exposure. This solution operated effectively throughout the 2002 Harvest.

5.2.2 CASE STUDY: Continuous flow grain drier

Installation details

Location:	Bedfordshire
Business details:	2000 ha arable farm
Target machine:	Continuous flow grain drier

Noise source / level

In common with many of material handling installations, continuous flow grain driers have a number of noise sources. The principal sources in this case included the drier burner units, associated grain handling equipment (elevators, conveyors, augers) and, to a smaller extent, the drier fan(s). The ambient noise level with the drier running was recorded at 82 dB(A). As the operator typically worked a 14 hour shift during the harvest season this noise level related to $L_{EP,d}$ of 84 dB(A)

Possible Noise Reduction Solutions

An operator booth was already in existence as part of this installation, to provide a protected environment for the operator. However, no door was fitted, greatly reducing the noise reduction within the control booth. The door was absent as the operator preferred to hear certain changes in the drier running noise, which would indicate a blockage or overload in the drier. The proposed solution for this situation was to install a door in the operator booth and provide some other means of identifying blockages / overloads. Fitting a door to the booth also had the added advantage of minimising dust ingress into the main operator work area.

Three methods were proposed as detailed below:

Option	Advantages	Disadvantages
Mechanical overflow sensor	Robust	Difficult to install Probably exceed £500 budget
CC tv camera monitoring overflow	Could be easily expanded to cover other areas	Relatively complicated solution Probably exceed £500 budget Would require constant visual monitoring
Microphone and amplifier / loudspeaker	Relatively robust Non obtrusive to original machinery Simple installation Audible warning enables operator to multitask	

The microphone and amplifier / loudspeaker was selected as the most appropriate system

Construction / Installation

The sound system, illustrated in Figure 13, was constructed from component parts by SRI Instrumentation Department (similar specification proprietary units and screened signal cable can be obtained from numerous electronic / electrical suppliers). The microphone was encased in a plastic box to protect it from dust and the box was fitted with a metal mounting bracket. This was then screwed to a wooden partition, adjacent to the drier overflow pipe, leaving approximately 5 mm clearance between the microphone and the overflow pipe (see Figure 13). The signal cable was then securely routed back to the control booth where it connected to the amplifier / loud speaker unit. The control booth door was installed by farm staff, who also relocated a light which had been previously fitted across the control booth access, as shown in Figure 14.

Figure 13 Sound system components (left) and microphone mounting position (right)

Results

The noise measurements taken before and after the control booth door was fitted, are given in Table 3. As previously stated 14 hour shifts were not uncommon and so $L_{EP,d}$ are also given. As can be seen the selected solution was beneficial with an 6 dB(A) reduction in the noise level inside the operator control booth.

Table 3 Operator noise levels

Measurement / Condition	*Control booth without door*	*Control booth with door fitted*
L_{eq} *(dB(A))*	82	76
$L_{EP,d}$ *(dB(A))*	84	78

Figure 14 Control booth access without door (left) and with door fitted (right)

5.3 ANIMAL FEED PREPARATION MACHINERY

5.3.1 Introduction

Initial fact-finding visits were undertaken to three farm enterprises, from which one was identified as being a suitable case study for further treatment. This enterprise, a large mixed farm incorporating a dedicated pig unit, utilised an electrically-powered hammer mill and a separate electrically-powered cubing machine to produce its own animal feedstuffs (see Figure 15).

Figure 15 General view of animal feed preparation building with hammer mill shown in the foreground

A number of visits were made to the farm to determine existing noise emission and exposure levels, the latter being dependent upon working practices / patterns. A number of potential noise reduction treatments were proposed for both the hammer mill and the cuber, these being considered as two separate case studies despite their common location. Whilst different solutions were initially proposed for these examples, cost and complexity of installation restricted the range of available options. Consequently noise reduction enclosures, made from plywood lined with acoustic foam, were constructed for both machines. These items, detailed in the relevant case studies, were constructed and installed, and have been in daily use on the farm in question since September 2002.

5.3.2 CASE STUDY: Animal feed preparation machinery (hammer mill)

Installation details

Location:	Feed preparation building
Business details:	Large arable / pig farm
Target machine:	Hammer mill used for the preparation of animal feeds

Noise source / level

The electrically-driven hammer mill had no anti-vibration mounts or sound absorption cladding with the result that, with the machine was running, noise levels of 93 & 88 dB(A) were recorded at 1.2 m & 4.6 m distance respectively.

Possible Noise Reduction Solutions

As pedestrian access was required to the sides of this location and access to the hammer mill was also required for regular servicing / maintenance, only one design was considered suitable:

Option	Advantages	Disadvantages:
Close fitting enclosure	Easy to build Self standing Could be built away from site Relatively inexpensive Simple construction materials	Air vent required for motor cooling and dust expulsion

Construction / Installation

The enclosure was constructed from a frame built from 50 x 50 mm wooden battens and clad in 19 mm plywood sheeting, glued and screwed together. The enclosure was designed to be self standing and allowed a minimum gap of 100 mm between the motor and the internal surfaces. Air vents were left at the front and rear (motor end) of the enclosure to ensure an air flow over the motor, with a stepped-baffle fitted to the rear air vent to minimise any noise seepage. The enclosure was assembled at SRI with an estimated materials cost of £40. The only adjustments that had to be made on site during installation was the addition of a clearance hole to the bottom of the sliding door for the electricity supply and a clearance hole for the ducting running up the grain input pipe.

It was intended to glue acoustic foam lining (25 mm thick acoustic poly-urethane (P.U.) foam, fire-retardant grade, with PVC skin) inside the enclosure, approximate cost £30, but this was delayed until after the initial installation. This enabled comparative noise levels to be recorded both with and without the addition of a foam layer inside the enclosure, as detailed below in Table 4. The foam was simply cut to fit with a Stanley knife and glued with aerosol spray adhesive to the inside of the plywood cladding.

Alternative sound absorption materials, such as rockwool or fibreglass, could be used instead of the PU foam. However, the thickness of the sound absorption material, and therefore the enclosure dimensions, may have to be increased to achieve the same level of attenuation.

Results

The noise measurements taken before and after the enclosure was fitted, as illustrated in Figure 16, are detailed in Table 4. As can be seen the selected solution was beneficial with an 8 dB(A) reduction in the bystander noise levels

Figure 16 Hammer mill installation, before (left) and after (right) noise reduction treatment

Table 4 Bystander noise levels

Distance from hammer mill (m)	*Initial level (dB(A))*	*Enclosure without PU foam (dB(A))*	*Final enclosure with PU foam (dB(A))*
1.2	93	87	85
4.6	88	84	80

5.3.3 CASE STUDY: Animal feed preparation machinery (cuber)

Installation details

Location:	Feed preparation building
Business details:	Large arable / pig farm
Target machine:	Lister cuber used for the preparation of animal feeds

Noise source / level

The electrically-driven cuber was mounted on an RSJ steel frame to give clearance for a discharge chute. Neither the machine chassis or the RSJ frame had anti-vibration mounts and no sound absorption cladding was evident, with the result that, the operational machine produced noise levels up to 92 dB(A).

Possible Noise Reduction Solutions

Any proposed solution for this machine had to enable good access as the die inside the cuber required regular maintenance. Access to the drive belts and operating lever, on the side of the cuber, was also required and no restriction to the cuber overflow flap would be allowed. Three solutions were proposed as detailed below:

Option	Advantages	Disadvantages:
Flexible PVC Curtain	Easy to fit Good sound reduction Non-obtrusive	Exceeded £500 budget
Erect partition & door	Simple design Simple construction materials	Significant construction time Probably exceed £500 budget Permanent fixture less attractive to owner Dust trap
Close fitting enclosure	Relatively easy to build Simple construction materials Relatively inexpensive Could be built away from site	Must be fully removable Adequate ventilation required

The close fitting enclosure was selected as the most cost effective solution.

Construction / Installation

To provide the required access to the cuber, the enclosure was constructed in two sections, each mounted on a common support frame (built from 100 x 100 mm wooden battens). The enclosure sections each consisted of a frame built from 25 x 50 mm & 25 x 75 mm wooden battens, clad in 19 mm plywood sheeting, glued and screwed together. Steel brackets were screwed to the frames to provide additional rigidity and an acoustic foam lining was glued to the inside of the plywood to enhance the noise reduction. The enclosure was assembled at SRI with an estimated materials cost of £120.

The original design had allowed for both enclosure sections to hinge from the support frame to gain full access to the cuber. However, upon first fitting, it was discovered that left hand side opening was restricted by colliding with an adjacent auger, so the design was modified with the LHS altered to a lift off section, located by dowels and over-centre catches.

Results

The noise measurements taken before and after the enclosure was fitted, as illustrated in Figure 17, are detailed in Table 5. As can be seen the selected solution was beneficial with a 5 - 8 dB(A) reduction in the bystander noise levels.

Figure 17 Animal feed cubing machine installation, before (left) and after (right) noise reduction treatment (noise reduction enclosure shown open for machine maintenance)

Table 5 Bystander noise levels

Measurement Position / Condition	*Initial level (dB(A))*	*With enclosure fitted (dB(A))*
1.8 m from cuber	89	82
At power controls on wall	92	84
Normal work area	85	80

5.4 TRACTOR (PTO) – POWERED MACHINES

5.4.1 Introduction

This example was proposed to demonstrate the degree of noise reduction 'benefit' achieved by keeping tractor cab windows closed (and sealing or glazing in good condition), particularly when operating attached implements which are capable of generating high noise emissions.

Of associated importance is the maintenance of the tractor cab ventilation and air conditioning systems, given that without the efficient operation of these systems it is necessary to open cab windows to ensure adequate driver comfort, irrespective of the resulting in-cab noise levels. It was proposed to investigate this case study in the vicinity of SRI using equipment at the Institute's disposal. A modern 120 kw four wheel drive tractor was paired to a suitable trailed forage harvester and arrangements made with a neighbouring dairy farmer to perform experimental noise measurements, using our harvesting equipment, during the first cut grass silaging period. Measurements of in-cab noise levels at the drivers ear were performed (in accordance with OCED microphone position location guidelines). Average in-cab noise levels (L_{Aeq}) during forage harvester operation were found to be 90 dB(A) with the rear window open and 74 dB(A) with the window closed: a significant reduction.

This reduction to in-cab noise levels would be applicable to other types of PTO driven equipment such as high density balers, shown in Figure 18, disc mowers, straw choppers and hedge cutters.

Figure 18 High density baler typical of PTO driven implements

5.4.2 CASE STUDY: Tractor and trailed forage harvester

Installation details

Location:	Bedfordshire
Business details:	Large dairy / arable farm
Target machine:	Tractor & trailed forage harvester

Noise source / level

A number of PTO driven implements are relatively loud noise sources, with the trailed forage harvester typical of this type of implement. The combination of high speed rotating components and high throughput of crop material resulted in an average recorded noise level of 90 dB(A), recorded in-cab at the operators ear with the tractor rear window open.

Possible Noise Reduction Solutions

In this case the simple solution was to close the windows of the tractor cab. However, for this to be effective in practice, the windows / doors must be undamaged and correctly fitted (see Section 5.7) and there must be sufficient ventilation / air conditioning to ensure driver comfort when the windows are closed. This solution would not be possible where the PTO driven implement was fitted with mechanical controls accessed through the rear window of the cab, however, modern practice is to use remote electric or hydraulic controls, limiting this practice to relatively few items of older or less noisy equipment.

Results

The noise measurement taken with the cab rear window open and closed, as illustrated in Figure 19, are detailed in Table 6. As can be seen the act of closing the window was highly beneficial with a 16 dB(A) reduction in the operator noise level. This type of field operation is often undertaken over relatively long working shifts and so estimated daily exposures for 10 & 12 hour periods are also given.

Table 6 Operator noise levels

Measurement Position / Condition	*Window open (dB(A))*	*Window closed (dB(A))*
Drivers ear	90	74
$L_{EP,d}$ (10 hour shift)	91	75
$L_{EP,d}$ (12 hour shift)	92	76

Figure 19 Tractor (with rear window open), trailed forage harvester and trailer

5.5 FARM-SCALE VEGETABLE HANDLING / PROCESSING LINE

5.5.1 Introduction

Following fact-finding visits to three enterprises, a farm business, which specialises in the production of onions and shallots, was approached and subsequently agreed to participating in the investigation. Noise levels in the vicinity of the main cleaning / grading line (see Figure 20), which runs throughout the year and requires 4-5 workers to operate it, were a concern to the owner. To this end, at the time of our initial visit, the current grading line was about to be renewed and its intended replacement was to incorporate a number of noise reduction measures.

In this instance the main source of noise was a vibratory pre-cleaning system, which feeds crop onto the grading line. The grading line operators could not be protected from this noise source by a personnel enclosure because forklift access is required to remove produce from the line. Consequently, enclosure of the noise source was preferable. This had been previously attempted to a degree, by use of lightweight curtains and plywood partitioning - illustrated in Figure 20, but it was acknowledged that this solution was inadequate. The proposed new system incorporated revision of the pre-cleaning system to permit much more complete enclosure using acoustically-effective materials (see Figure 21). In other parts of the plant, specific operator stations were provided with dedicated enclosures for protection against both ambient noise and temperature levels (see Figure 22).

Consequently, prior to system renewal, noise levels and frequency spectra were recorded during system operation at all operator stations, to enable both likely noise sources and daily noise exposure levels to be determined. Following installation of the new system we returned to the site, documented the system modifications and recorded appropriate noise levels and frequency spectra during grading line operation, thereby permitting assessment of the effectiveness of the noise reduction measures utilised.

Figure 20 Farm-scale vegetable handling / processing line

5.5.2 CASE STUDY: Onion grading line

Installation details

Location:	Grading line facility
Business details:	Large arable farm & vegetable pre-packing enterprise
Target machine:	Onion / shallot cleaner grader

Noise source / level

The main source of noise on the original grading line was a vibratory pre-cleaning system, which feeds crop onto the grading line. Noise measurements, with the existing noise enclosure (curtain) in place, showed that the operators were exposed to noise levels between 84 – 87 dB(A) depending on their position within the facility.

Possible Noise Reduction Solutions

The owner was already concerned about these noise levels and was in the process of specifying an upgraded onion grading line and an enclosure for the precleaning system. Advice on the materials and construction of the new enclosure was given to ensure the enclosure was separated from the noise generating machinery and panel reverberation was minimised. The investigation team then recorded the operator noise levels before and after the installation of the enclosure.

Results

The noise measurement taken before and after the new enclosures were fitted, as illustrated in Figures 21 & 22, are detailed in Table 7.

Figure 21 Old (left) and new (right) sound enclosures on onion grading line

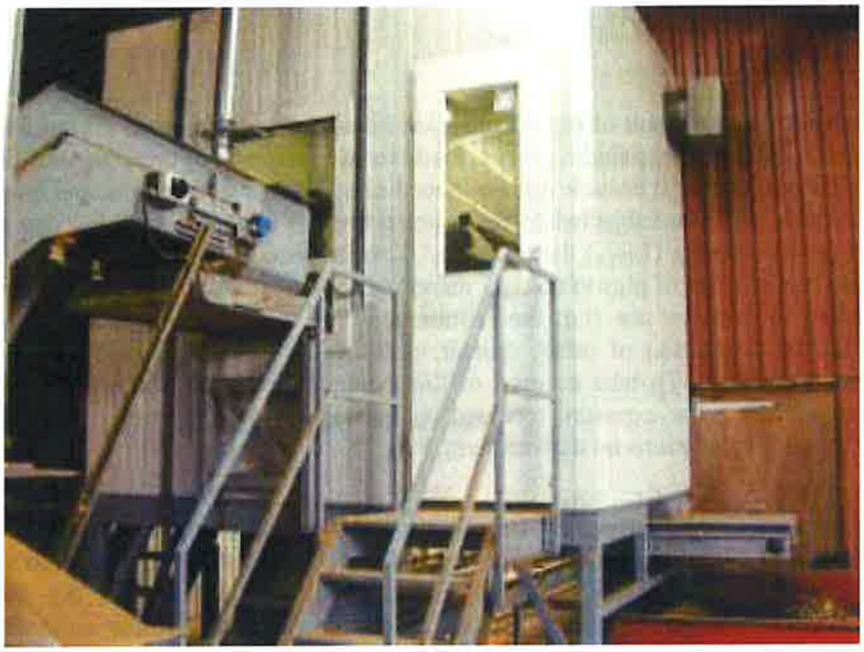


Figure 22 Dedicated operator station on onion grading line

As can be seen the new enclosures were beneficial with a 7 - 10 dB(A) reduction to the operator noise levels, bringing them below the PA (N) D first action value.

Table 7 Operator noise levels

Measurement Position / Condition	***Initial level (dB(A))***	***With new enclosures (dB(A))***
General work area	87	76
First sorter	86	78
Second sorter	86	78
Third sorter	84	77

5.6 ANIMAL VOCALISATION DURING FEEDING

5.6.1 Introduction

Worker noise exposure as a result of pig vocalisation immediately before and during feeding is a well-recognised problem. Fact-finding visits, made to two modern pig breeding and fattening enterprises, confirmed that high noise levels do indeed exist. However, the principal issue is the duration over which staff are subjected to these noise levels during the working day and the resultant daily noise exposure ($L_{EP,\,d}$) they receive. This is frequently dependent upon the size of the enterprise (i.e. number of pigs to be fed / inspected), the relative proportion of manual and automatic feeding systems in use (i.e. the requirement for worker presence during feeding operations), and the proportion of other, quieter, non-feeding activities, which each worker performs during each day. To take account of this potential for significant variation, it was necessary to record the noise exposure received by individual workers, rather than the noise levels present at specific locations on a given farm.

A large farm-based pig rearing business in Suffolk was approached, primarily because certain of their sites utilise both automatic and manually-operated feeding systems. A suitable site was selected and ambient noise levels recorded during feeding operations in pig buildings incorporating either manual or automatic feeding systems. Additionally, the noise exposure received by the individual workers responsible for these specific buildings, during the course of a working shift, was determined by provision of personal noise dosemeters (see Figure 23). This enabled direct comparison between the feeding systems employed and resultant worker noise exposure.

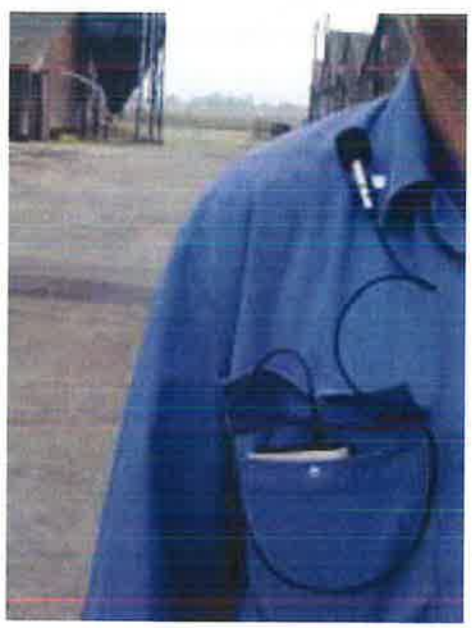


Figure 23 Personal noise dosemeter worn during working period

5.6.2 CASE STUDY: Pig finishing unit

Installation details

Location:	Suffolk
Business details:	Intensive pig enterprise
Target operation:	Daily noise dose received by pig stockmen

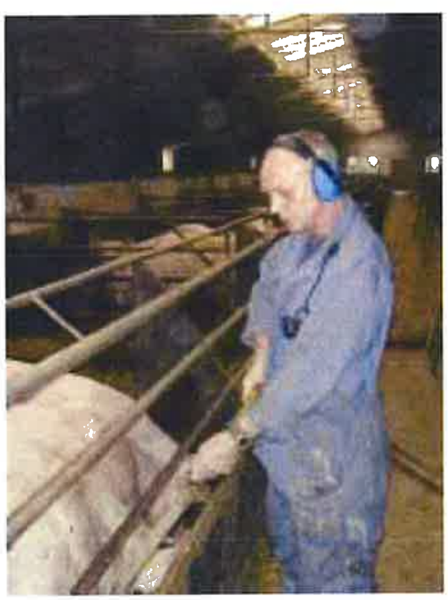
Noise source / level

The noise source (pigs) cannot easily be modified or enclosed so this case study investigated the ambient noise levels recorded during feeding operations when the pigs were generally loudest. This was undertaken in pig buildings incorporating both manual and automatic feeding systems. Additionally, as the noise exposure received by the individual stockmen, responsible for these specific buildings, would vary depending on the proportion of time spent on each task, they were therefore provided with a personal noise dosemeters for the duration of a working shift.

The histories from these dosemeters showed that the stockman involved in manual feeding spent 6 hours in the houses, and that levels during the first feed of the day averaged about 100dB(A) ($L_{EP,d}$ 93 dB(A)). The stockman in charge of the automatically fed pigs was also in the houses during the first feed of the day, although his exposure then was about 5 dB lower. Later in the day, levels in both types of house varied between 80 dB(A) and 90 dB(A).

Possible noise reduction solutions

In this case the solution would be to change working practice or the feeding system to minimise the time spent by each worker inside the pig units, especially during noisy periods. It is clearly an important part of a stockman's duties to observe and monitor each animal's behaviour and condition. However, if more feeding could be automated, as illustrated in Figure 24, and the stockmen discouraged from entering the houses during the first feed of the day, then daily noise exposure could be reduced by 6 to 8 dB(A), to 85-87 dB(A). Although this level is significantly lower, where it exceeds the Second Action Level hearing protection would be required.



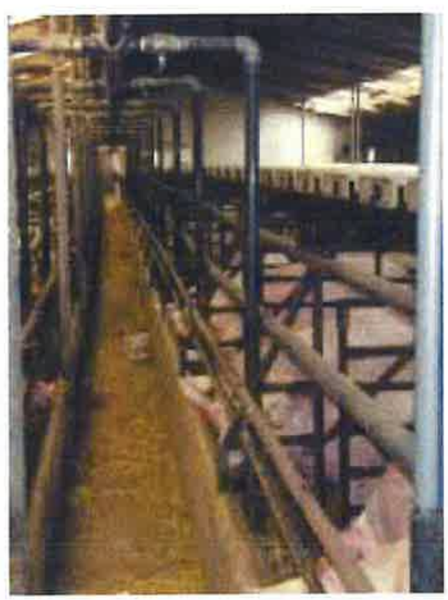


Figure 24 Manual (left) and automatic (right) feeding systems

5.7 CABS OF MOBILE MACHINES

5.7.1 Introduction

An example vehicle, which had a Q-cab in a dilapidated condition, was identified and procured for the duration of the project. The in-cab noise levels of this model of tractor had been measured at SRI (then NIAE) in accordance with OECD Test Code procedures, prior to the vehicle being introduced to the UK market (May 1976). Original comparative data was therefore readily available to determine the success of any remedial action.

The test tractor originally suffered from a complete absence of noise reduction material in the cab floor and transmission tunnel area, no lower rear window, deteriorated / absent door and rear window sealing, severely corroded (holed) cab doors, and worn cab rubber anti-vibration ('iso') mountings. Potential sources of cab replacement interior cladding and noise reduction materials were identified from specialist tractor restoration magazines and web search engines. The market is dominated by a small number of companies, two of whom were visited to discuss availability and fitting of components. Necessary noise reduction-related components were subsequently procured for the target vehicle.

An experimental test schedule was then devised to determine the effect of each of these noise reduction components upon in-cab noise levels. In-cab noise level measurements were undertaken in each test condition, in a range of transmission gears, utilising the SRI vehicle performance test track and load car drawbar dynamometer facility, in accordance with OECD Test Code procedures (see Figure 25).

The test results obtained demonstrate significant in-cab noise level reductions, in the region of 5 dB(A), as a result of the treatments applied, approaching those levels originally recorded when the tractor model was tested in new condition. An impressive result, given that inevitable age-related wear of the test tractor's transmission components is likely to generate higher noise levels today. The remedial work performed on the vehicle could easily have been undertaken in a farm workshop: noise reduction component costs being in the region of £200 – 250.

Figure 25 Measurement of test tractor in-cab noise level during drawbar loading

5.7.2 CASE STUDY: Tractor Q-cab refurbishment

Installation details

Location:	Bedfordshire
Business details:	Small arable farm
Target machine:	Leyland 272

Noise source / level

The main sources of noise on agricultural tractors are the engine / exhaust and the transmission. Any attached implement, especially PTO-driven, can also be a significant noise source but this is dealt with in a separate case study – see Section 5.4. The dilapidated Q-cab of the test tractor had no noise reduction material on the cab floor and transmission tunnel area, no lower rear window, deteriorated / absent door and rear window sealing, severely corroded (holed) cab doors, and worn cab rubber anti-vibration ('iso') mountings. This resulted in in-cab noise levels between 89 – 92 dB(A), which were up to 7 dB(A) higher than the original OECD test measurements when the vehicle was new.

Possible Noise Reduction Solutions

The overall aim of this case study was to return the cab to as close to "as new" condition as practical, in terms of noise emmissions, by replacing worn or missing acoustic absorption materials and repairing the window and doors. Noise measurements were repeated at each stage of the refurbishment, detailed in Table 8, to determine the effect of the individual vehicle cab-related noise reduction components upon in-cab noise levels.

Table 8 Tractor in-cab noise test programme

Test condition	*Vehicle condition / treatment*
1	Cab iso-mounts bypassed by insertion of steel wedges, to encourage noise/vibration transfer. No floor mats, transmission tunnel trim or lower rear window fitted
2	As Condition 1, but with steel wedges removed: i.e. vehicle as procured
3	As Condition 2, plus floor matting & transmission tunnel trim
4	As Condition 3, plus door lower sections repaired & door seals renewed
5	As Condition 4, plus lower rear window installed & upper rear window seal renewed
6	As Condition 5, plus plywood baffle plate between engine bay & cab
7	As Condition 6, plus cab rubber iso-mounts renewed
8	As Condition 7, but with floor mats and transmission tunnel trim removed

Construction / Installation

Potential sources of cab replacement interior cladding and noise reduction materials were identified and the selected items procured (a list of suppliers is given below). These included a proprietary transmission tunnel cover (constructed from 6mm moulded rubber mat and 19 mm reconstituted foam) at £85, 4 mm rubber floor mat, which was supplied as a roll and cut to fit, at £10/m^2 and 12 mm self adhesive sound barrier foam, also cut to fit and glued to the underside of the floor mat, cost £23 per 1.5 m^2 sheet.

As no proprietary seals were readily available for the doors and windows, acceptable replacement seals were formed by cutting 20 mm wide strips from the sound barrier foam, and then carving through it laterally, so reducing its thickness to 6 mm. The doors were repaired in the SRI workshop by cutting out the corroded sections and re-fabricating the lower doorframe and door skin. A second-hand lower rear window was purchased from a specialist tractor breaker at a cost of £20. The baffle plate was cut to suit from plywood sheeting and the cab iso-mounts were procured at a cost of £25 each

Suppliers

P. J. Dring &Co
Raicon Estate, 15 Ashwell Road, Steeple Morden, Nr Royston, Herts, SG8 ONZ
Tel: 01763 853132 Fax: 01763 852 454

Trelleborg Industrial AVS
PO Box 98 Evington Valley Road Leicester LE5 5LY
Tel: 0116 273 0281 Fax: 0116 273 5698
www.trelleborg.com

Uphill Sales & Services
Uphill, Urchfont, Devizes, Wiltshire, SN10 4SA
Tel: 01380 840285 Fax: 01380 848238
www.uphillsales.co.uk

The Vapormatic Co Ltd
Kestrel Way, Sowton Ind. Estate, Exeter, UK, EX2 7NB
Tel: +44 (0) 1392 435461 Fax: +44 (0) 1392 438445
www.vapormatic.com

Wyard Scott Ltd
The Garage, Great Green, Cockfield, Bury St. Edmunds, Suffolk, IP30 0HJ
Tel: 01284 828209 & 828421
www.agridesign.co.uk/wyardscott/contact.htm

Results

The noise measurements were taken at each stage of the refurbishment process and are detailed in Table 9, together with the original test results. As can be seen there was a general improvement as the cab was returned to "original" specification and the single best improvement was achieved by the replacement of the floor mat and transmission tunnel trim, illustrated in Figure 26. All of the repairs showed a slight improvement and the final solution was beneficial with an 5 dB(A) reduction to the operator noise levels.

Table 9 Results of in-cab noise test programme

Test Condition Gear / noise level	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***Original test***
H1	89	89	85	85	85	84	85	87	86
H3	92	91	89	87	88	87	87	89	84
L3	92	91	87	86	86	86	87	90	-
H5	93	92	89	88	87	87	88	-	85

Figure 26 Dilapidated (left) and refurbished (right) tractor Q-cab

6 DISCUSSION / CONCLUSIONS

The review of trends in farm practices and machinery development suggests that noise problems are still prevalent in agricultural situations, even though there has been a steady increase in the availability of materials and equipment for noise control over recent years. The apparent reluctance of the agricultural sector to embrace the use of these noise reduction methods is probably due, at least in part, to the perceived cost. This investigation therefore set out to determine if cost effective solutions could be implemented on examples of high noise exposure utilising on-farm labour and low cost materials.

Although several of the 27 examples discussed (with daily operator exposures ($L_{EP,\,d}$) between 89 – 104 dB(A)), such as portable powered equipment, are eliminated as being only suitable for use with Personal Protective Equipment (PPE - hearing defenders), 7 were selected for use as demonstration projects. These case studies were selected because of their wide applicability across the agricultural sector:

- Farm-scale potato pre-cleaning / grading line;
- Grain drier;
- Animal feed preparation machinery (hammer mill / cuber);
- Tractor (PTO)-powered machine (forage harvester);
- Vegetable packing shed;
- Animal vocalisation during feeding;
- Cabs of mobile machines (Q-cab refurbishment)

Farm scale potato grading lines were found not to be a significant noise emitter following on-farm measurement on a range of potato grading enterprises. However case studies were successfully conducted on the remaining examples, demonstrating an improvement between 3 - 16 dB(A) in the ambient / operator noise level.

The animal vocalisation case study compared two different feeding systems and, although the automatic system was beneficial in terms of the daily noise dose received by the operator, the extremely high noise levels that the operator is exposed to require that PPE is still worn.

In general, the remaining case studies illustrated that some form of effective enclosure, either for the machine or operator, to isolate the operator from the noise source, demonstrated a significant improvement, even when constructed / refurbished from relatively low cost materials. The agricultural enterprises concerned were very pleased with the results, indicating that cost effective noise reduction solutions are available to, and implementable by, the agricultural sector.

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8 APPENDICES

APPENDIX 1 SUMMARY OF AGRICULTURAL ACTIVITIES AND ASSOCIATED NOISE LEVELS DERIVED FROM TALAMO ET AL. (1988)

[1] - Class number as given in contract report CR/279/88/8321

[2] - Where the length of exposure reduced the Leq to below 80 dB(A) the average length of time operating the machinery is given

[3] - Ranked according to LA8 above 90 dB(A). 58 of the 76 classes of agricultural machine exceed the proposed LA_8 Second Action Level of 85 dB(A)

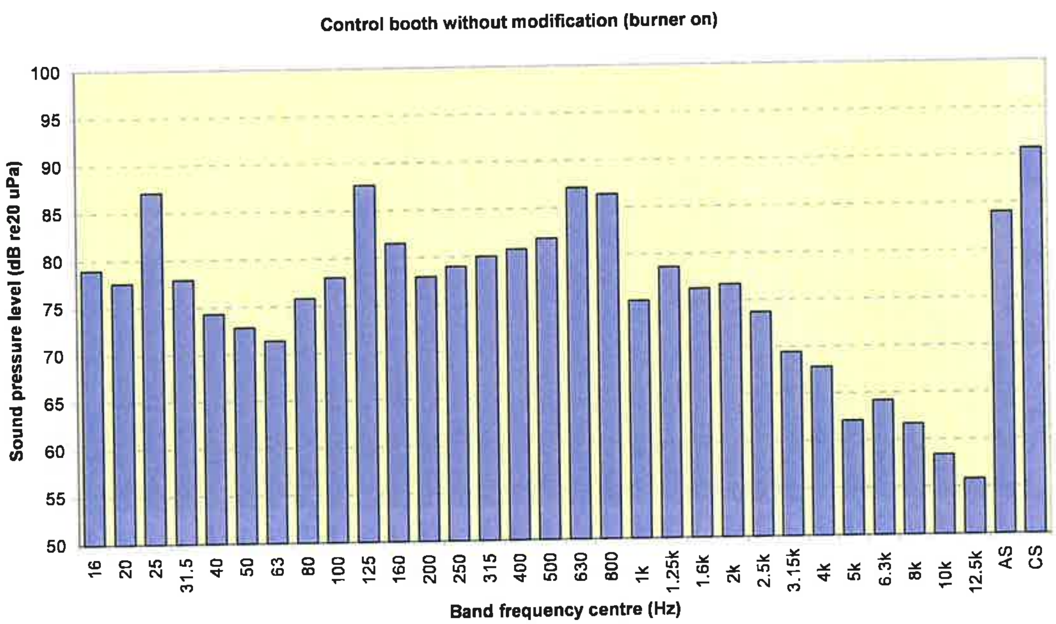
Operation	*Type (number surveyed)*	*Class no.* [1]	*Average working level (dB(A))*	*Corrected L_{eq} for shift (dB(A))* [2]	*Equivalent 8 hour Lavg $L_{EP,D}$ (dB(A))*	*Ranking* [3]
Grain Drier	Cascade (6)	1.1.1	93.4	91.4	92.3	**13**
	Tower (1)	1.1.2	84.6	84.5	86.4	
	Cross flow (20)	1.1.3	93.8	93.9	95.5	**7**
	Batch (1)	1.1.5	85.5	84.8	87.9	
Crop Drier	Green Crop (13)	1.2.1	89.8	89.0	90.8	**17=**
	Axial conditioning (1)	1.2.3	105.5	(11 min)		
Feed preparation	Hammer mill (12)	1.3.1	85.5	89.3	87.2	
	Roller/crusher mill (5)	1.3.2	92.3	96.4	94.8	**8**
	Vertical mixer (4)	1.3.3	80.9	(15 min)		
	Cuber and pelleter (1)	1.3.5	90.4	(6 min)		
Grain transporter	Loading/Auger (3)	1.5.1	84.7	84.7	85.2	
	Conveyor (1)	1.5.3	84.3	84.0	84.2	
Hop machinery	Field machinery (1)	1.7.1	84.0	82.8	83.3	
	Cleaner/picker (8)	1.7.2	93.9	93	93.6	**11**
	Drier/packing (7)	1.7.3	88.0	87.4	88.7	
Vegetable/ packing shed operations	Grader/sorter (23)	2.1.0	89.0	88.3	87.0	
	Washer/cleaner (4)	2.2.0	87.2	86.3	85.1	
	Packing/weigher (11)	2.3.0	90.3	89.6	89.0	
	General operating area (2)	2.4.0	91.6	91.0	92.1	**14**
	Transportation (2)	2.5.0	87.1	85.8	86.4	

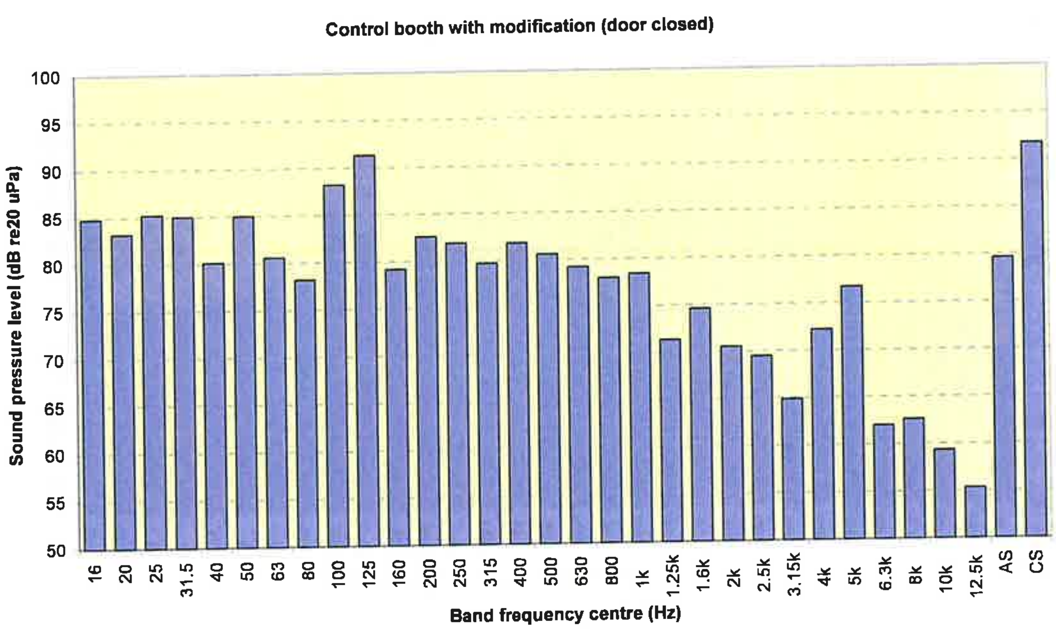
Self-propelled machinery	Combine <15' cab (7)	3.1.1	85.3	86.2	87.7	
	Combine <15' no cab (6)	3.1.2	91.3	89.6	89.7	
	Combine >15' cab (19)	3.1.3	88.4	87.1	88.7	
	Forage harvester (9)	3.2.0	87.3	84.4	86.1	
	Potato harvester (11)	3.3.0	89.1	88.6	88.5	
	Beet harvester (10)	3.4.0	91.7	90.5	91.2	**16**
	Swather (11)	3.5.0	87.4	86.1	87.4	
	Pea viner (5)	3.6.0	87.7	85.9	87.3	
	Others (sprayer, digger dumper etc.) (17)	3.7.0	90.0	89.3	90.8	**17=**
Self-propelled machinery	Tracklayer -slow (16)	3.8.1	97.5	95.5	95.8	**6**
	Tracklayer -HS (9)	3.8.2	99.8	97.8	98.2	**4**
Tractor with field machine	Forage harvester cylinder chop (15)	4.1.1	89.3	87.6	88.8	
	Forage harvester flywheel chop (5)	4.1.2	88.9	87.6	88.2	
	Mower - drum (2)	4.2.2	90.6	80.7	78.6	
	Mower - disc (12)	4.2.3	91.1	90.9	91.5	**15**
	Mower - cylinder (8)	4.2.4	86.8	86.2	86.5	
	Mower - flail (1)	4.2.5	88.0	1hour 46 min		
	Power harrow (12)	4.3.0	87.7	86.4	87.4	
	Rotary cultivator (3)	4.4.0	90.4	85.3	83.5	
	FYM spreader (10)	4.5.0	89.0	86.5	87.0	
	Baler - ram (4)	4.6.1	90.1	87.3	88.5	
	Baler - round (3)	4.6.2	86.5	85.5	87.3	
	Baler - high density (1)	4.6.3	96.8	90.6	92.4	**12**
	Hedge cutter - flail (9)	4.7.1	91.4	87.8	88.3	
	Hedge cutter - saw (1)	4.7.2	89.6	89.1	90.5	**21=**
	Orchard sprayer (5)	4.8.0	97.9	95.7	96.9	**5**
	Misc. straw chopper (1)	4.9.1	90.4	89.4	90.8	**17=**
	Misc. tedder/ turner (4)	4.9.2	88.5	1 hour 2 min		

Tractor with field machine	Misc. veg. topper (2)	4.9.3	88.6	87.1	89.2	
	Misc.veg harvester (8)	4.9.4	88.7	87.4	88.2	
	Misc. Beet harvesting (3)	4.9.5	89.0	89.4	90.5	**21=**
	Misc. sprayer (3)	4.9.6	87.2	83.7	84.6	
	Misc. drilling (5)	4.9.7	88.6	2 hours 8 min		
	Misc. trailer transport and ploughing (38)	4.9.8	89.2	89.8	90.1	**23**
	Worker on machine (2)	4.10.1	106.6	102.6	104.1	**1**
	Worker not on machine (3)	4.10.2	84.1	85.0	82.8	
Horticultural machines	Cylinder mower - pedestrian (8)	5.1.1	88.2	85.1	85.3	
	Cylinder mower - sulky (1)	5.1.2	86.7	1 hour 1 min		
	Cylinder mower ride-on (12)	5.1.3	88.6	86.3	86.8	
	Rotary mower (9)	5.2.1	88.6	86.9	87.4	
	Rotary mower ride-on (5)	5.2.2	92.3	1 hour 8 min		
	Rotary cultivator (5)	5.3.1	89.9	81.8	82.5	
	Hoe cultivator (1)	5.4.1	92.5	28 min		
	Other- potato lifter(1)	5.5.0	87.9	40 min		
Man carried	Blower/duster (3)	6.1.0	89.4	93.8	93.8	**10**
	Hedge cutter (7)	6.2.0	93.1	89.3	89.7	
	Chain saw (3)	6.3.0	103.9	99.9	100.6	**2**
	Other - bystander to above (4)	6.4.0	84.4	3 hours 11 min		
Livestock	Pig feeding (6)	7.1.0	93.3	87.7	88.9	
	Cattle feeding by wagon (5)	7.2.0	86.1	86.9	88.0	
	Milking parlour (6)	7.3.0	80.3	1 hour 7 min		
	Turkey plucker (1)	7.4.0a	99.8	99.4	99.4	**3**
	Turkey house (1)	7.4.0b	94.4	93.9	93.9	**9**
	Calf feeding (1)	7.4.0c	76.6	4 hours 41 min		
Workshop	Angle grinder (3)	8.1.0	88.1	90.0	90.7	**20**
	General workshop activities (2)	8.2.0	84.5	84.2	85.1	

APPENDIX 2 CASE STUDY NOISE SPECTRA

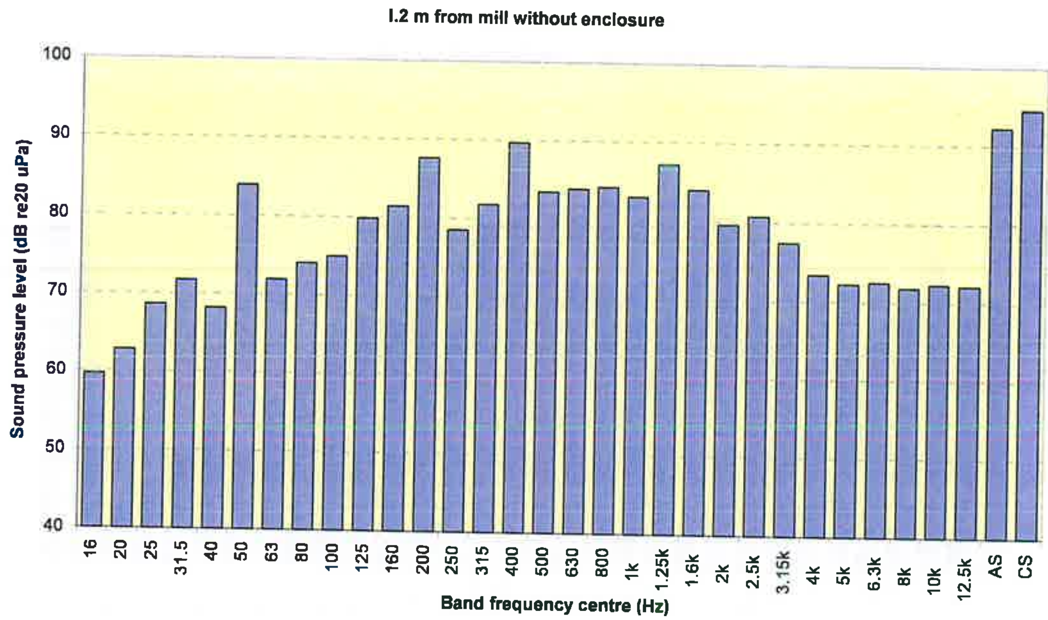
A2.1 Continuous flow grain drier

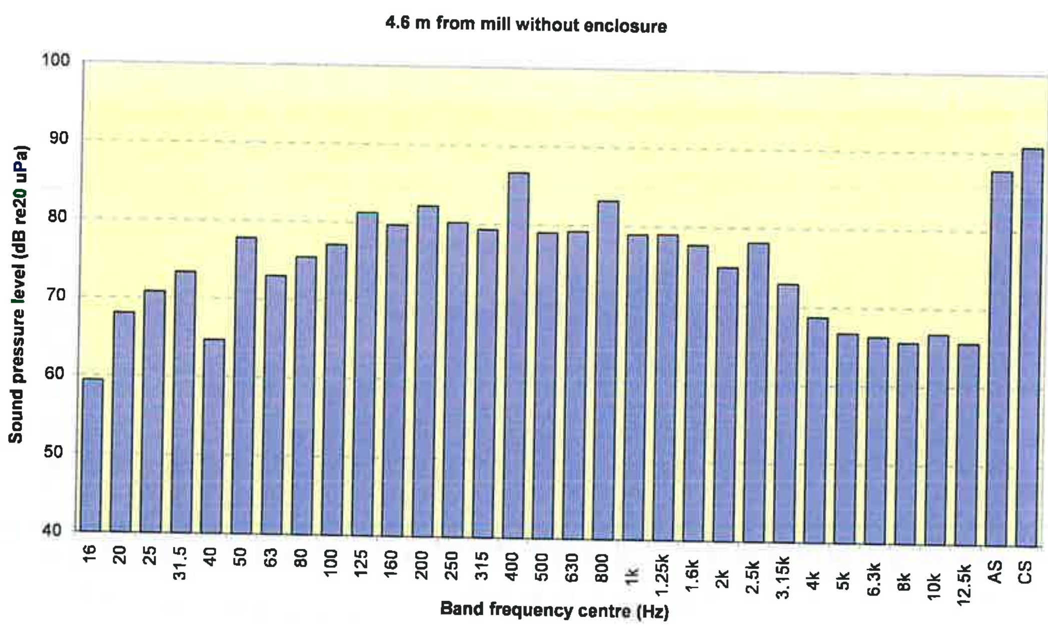




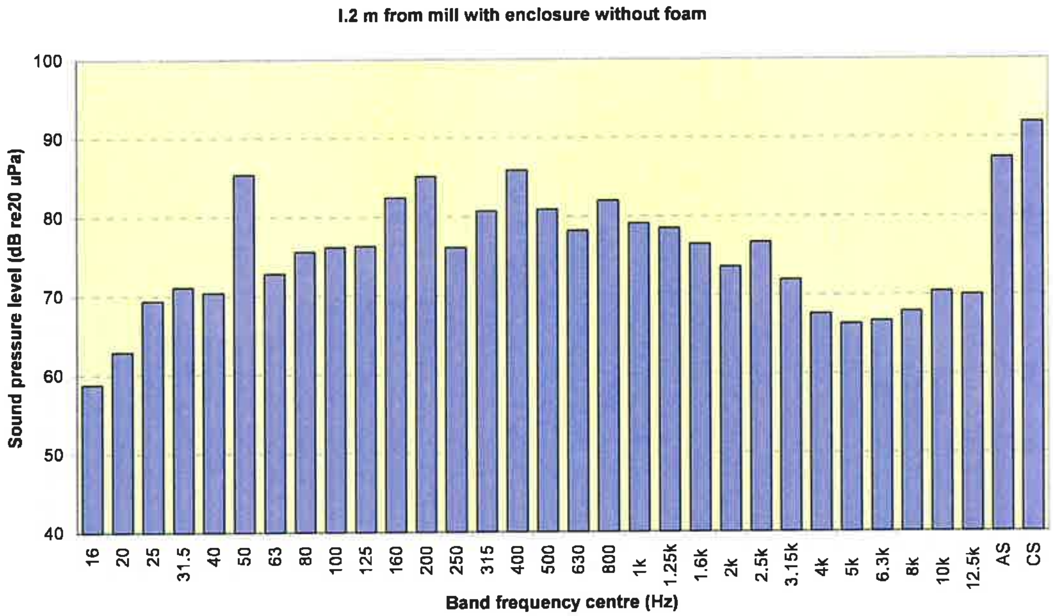
Noise spectra before and after the control booth door was fitted

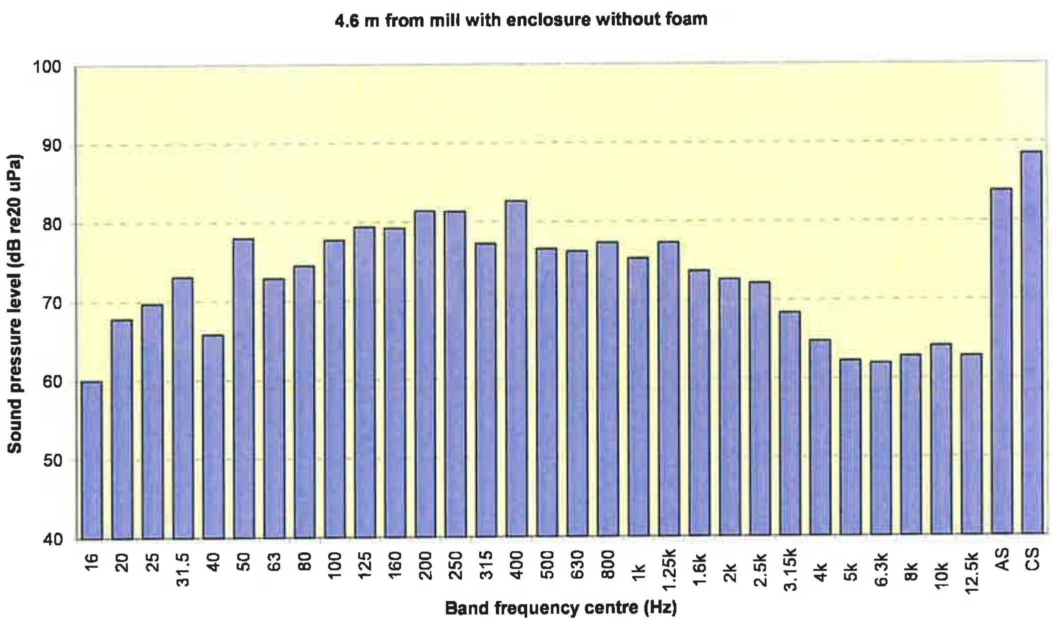
A2.2 Animal feed preparation machinery (hammer mill)



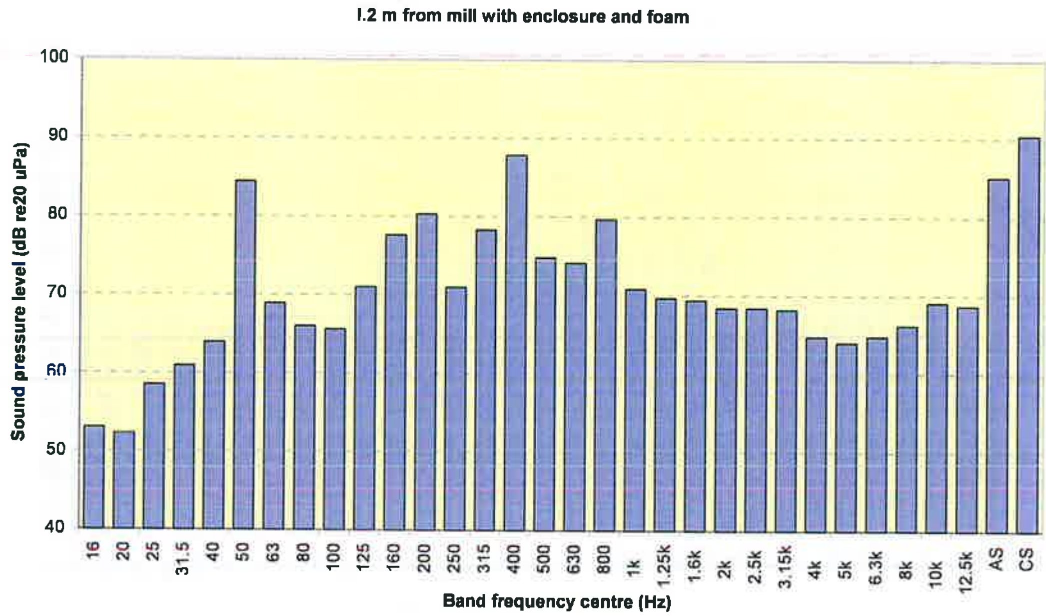


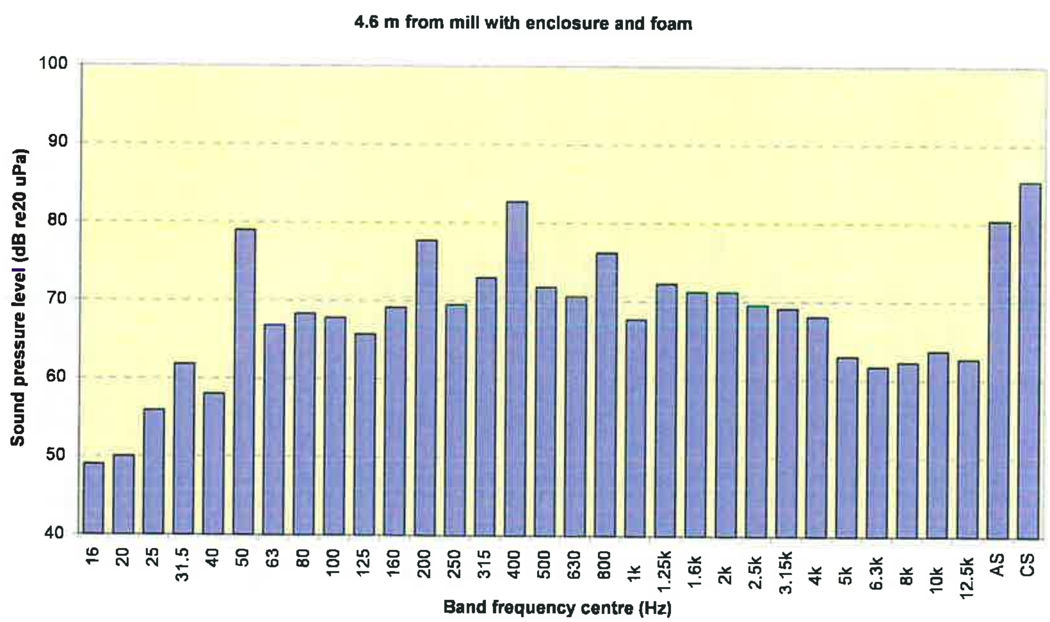
Noise spectra before enclosure was fitted to hammer mill





Noise spectra after enclosure (without PU foam) was fitted to hammer mill

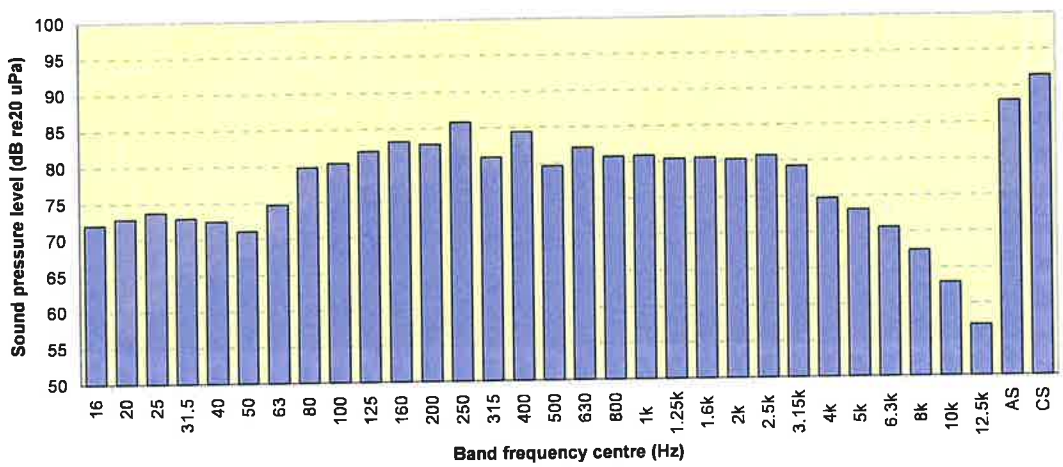




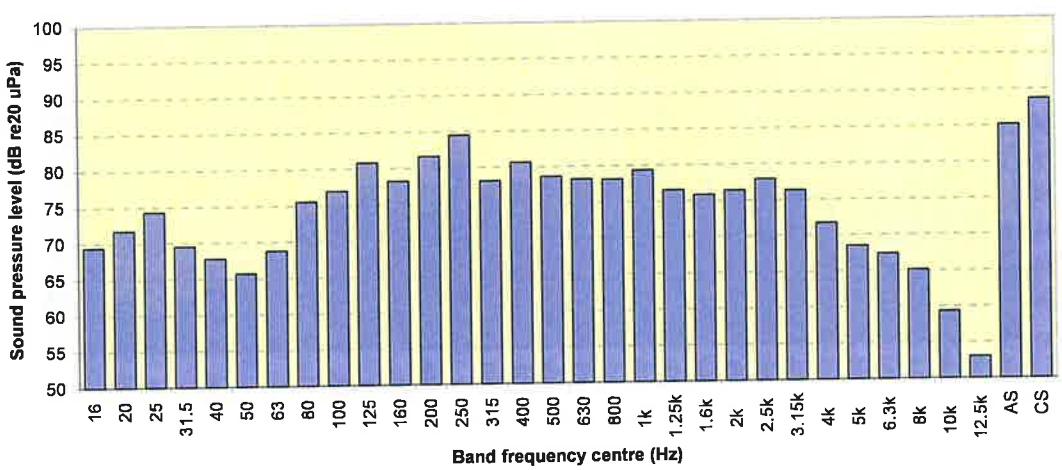
Noise spectra after enclosure and PU foam was fitted to hammer mill

A2.3 Animal feed preparation machinery (cuber)

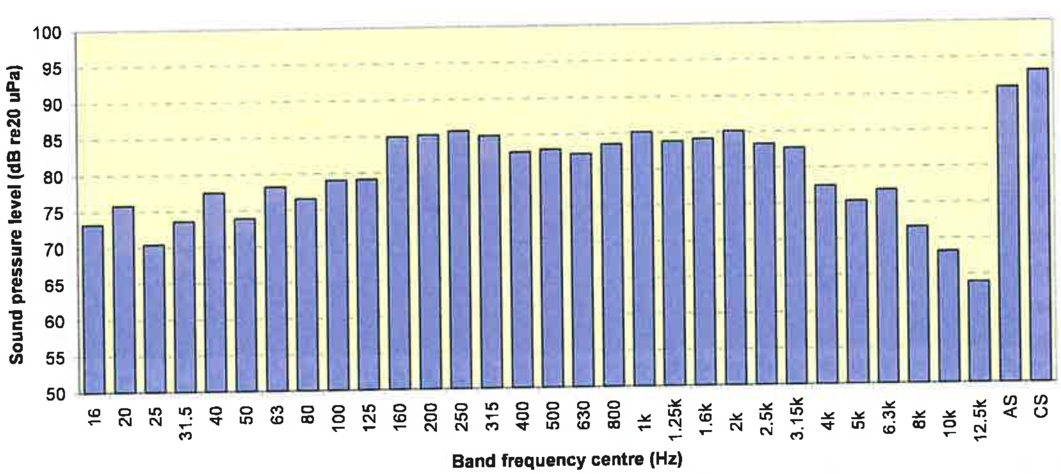
I.8 m from cuber without enclosure fitted



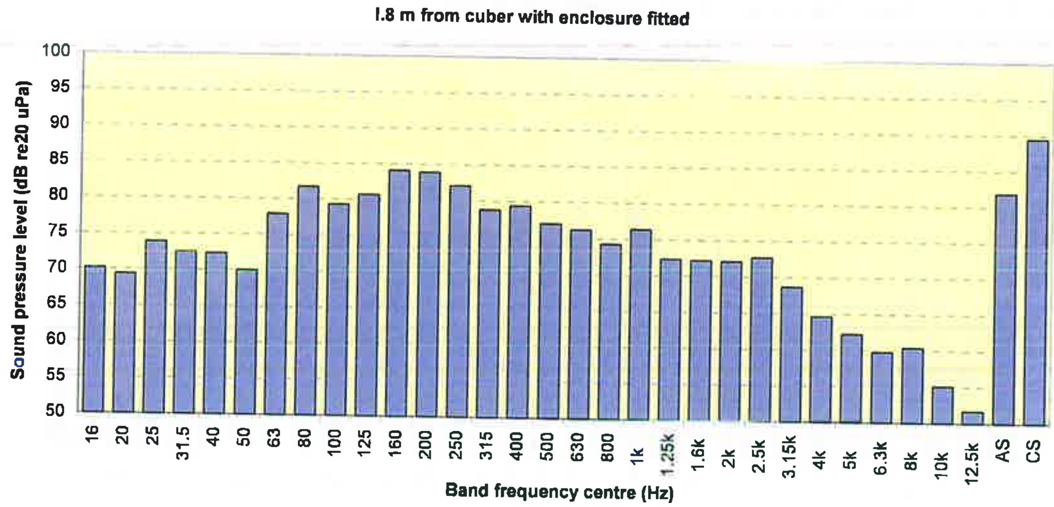
In normal work area without enclosure fitted

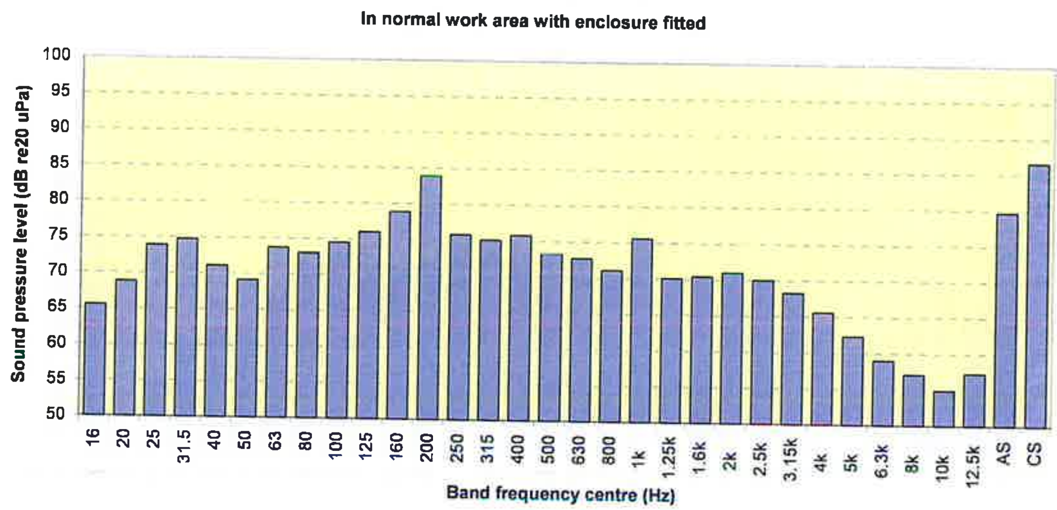


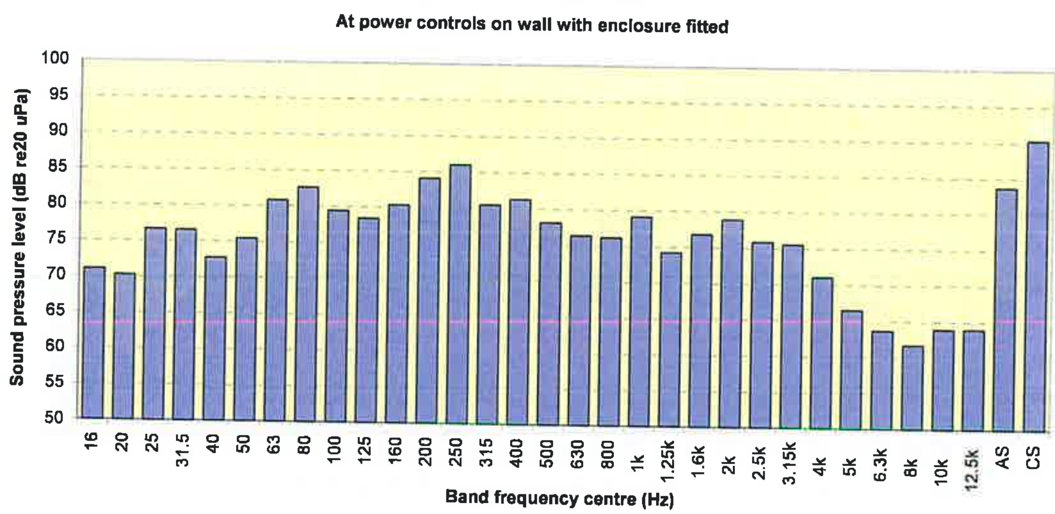
At power controls on wall without enclosure fitted



Noise spectra before enclosure was fitted to cuber

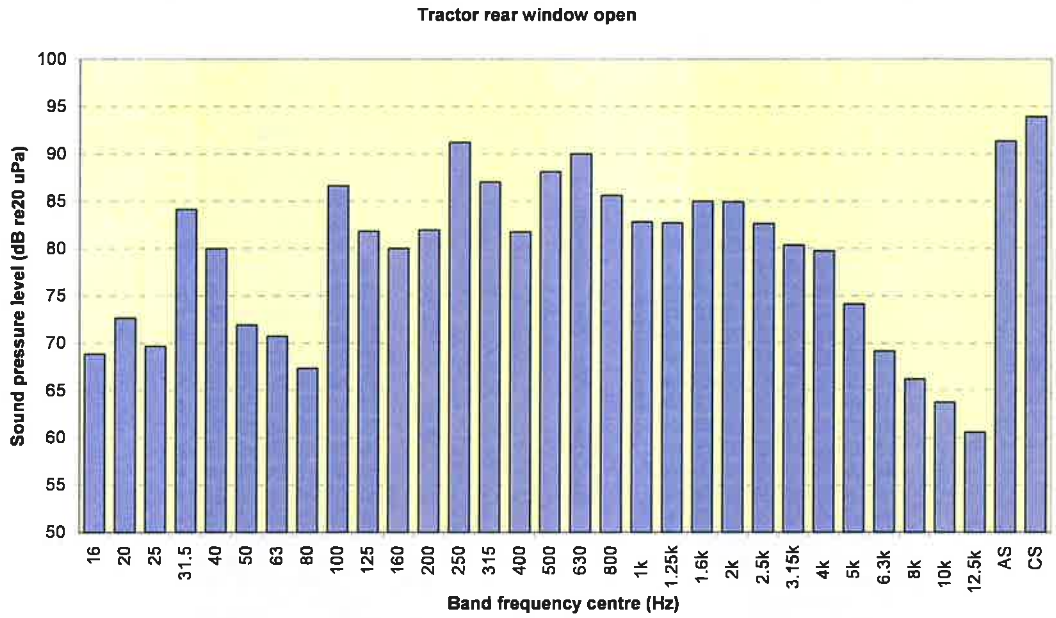






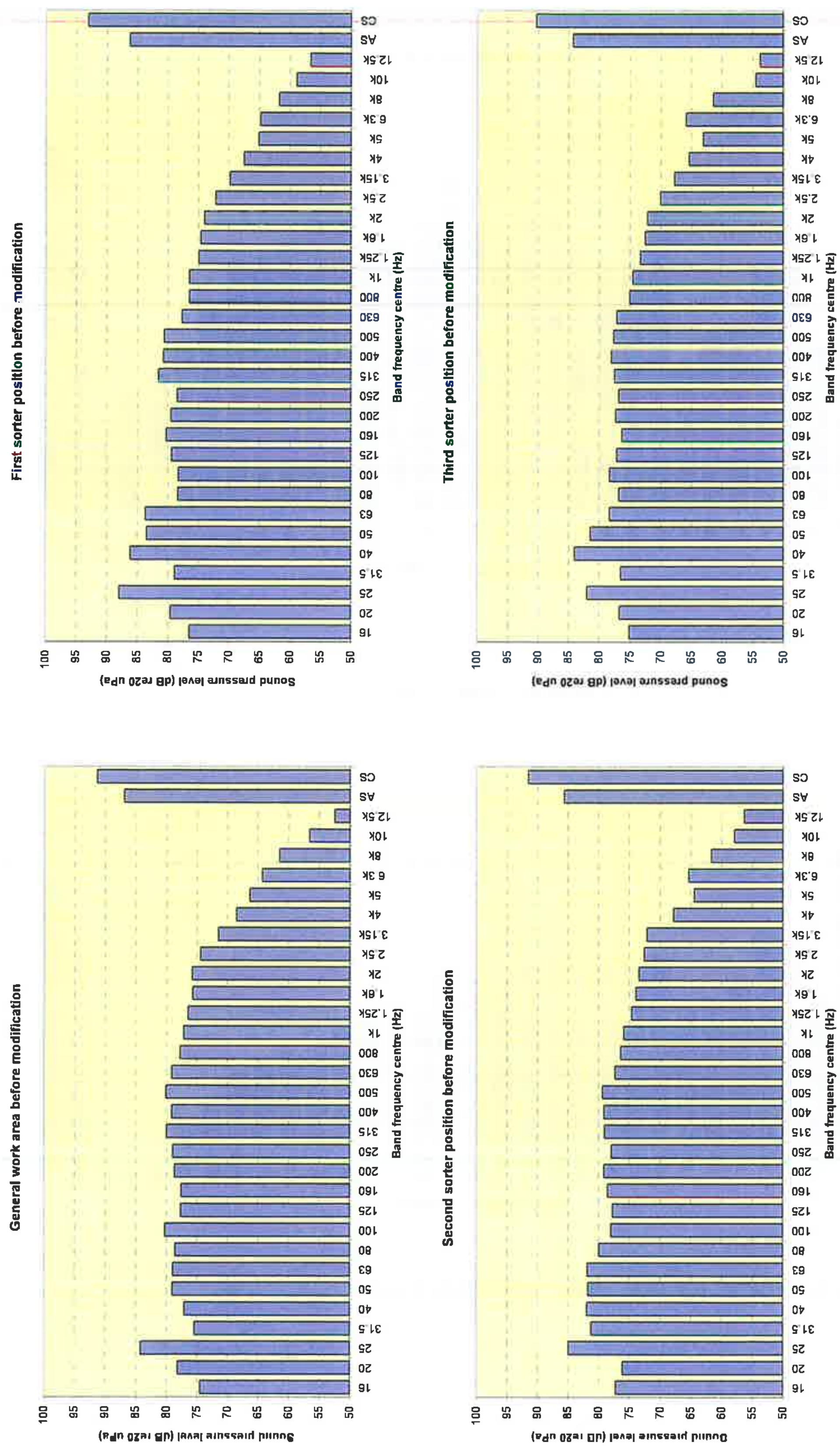
Noise spectra after enclosure was fitted to cuber

A2.4 Tractor and trailed forage harvester

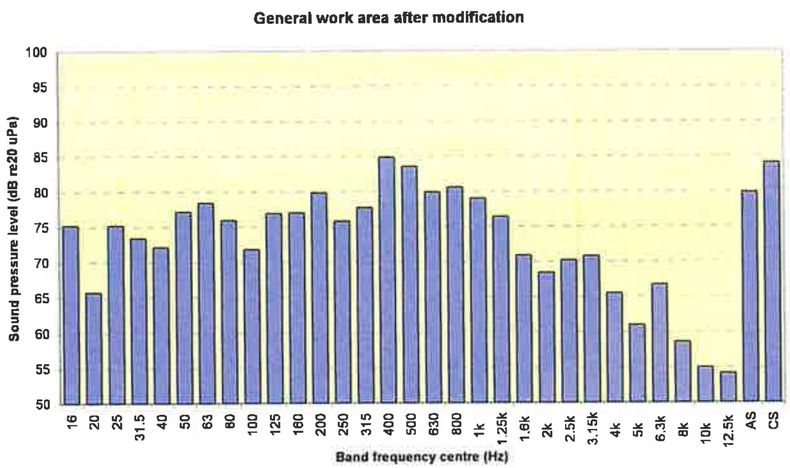


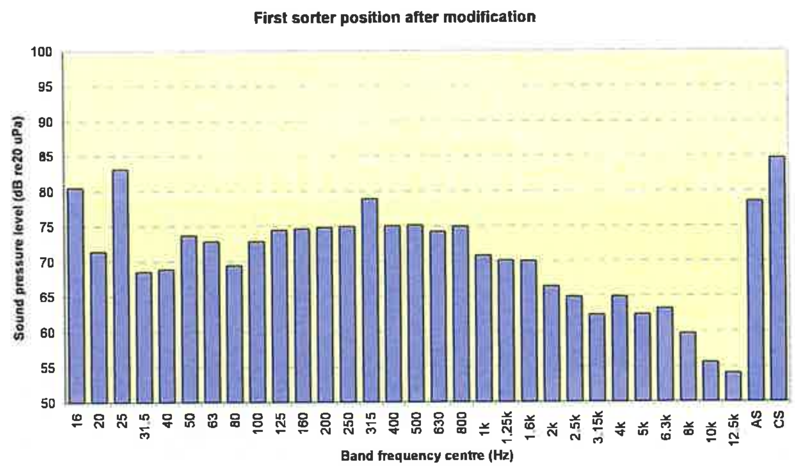
Noise spectra with tractor cab rear window open and closed

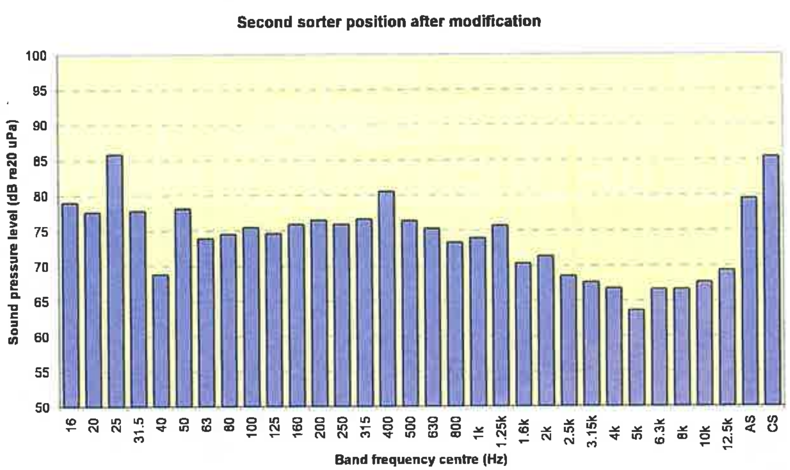
A2.5 Onion Grading line

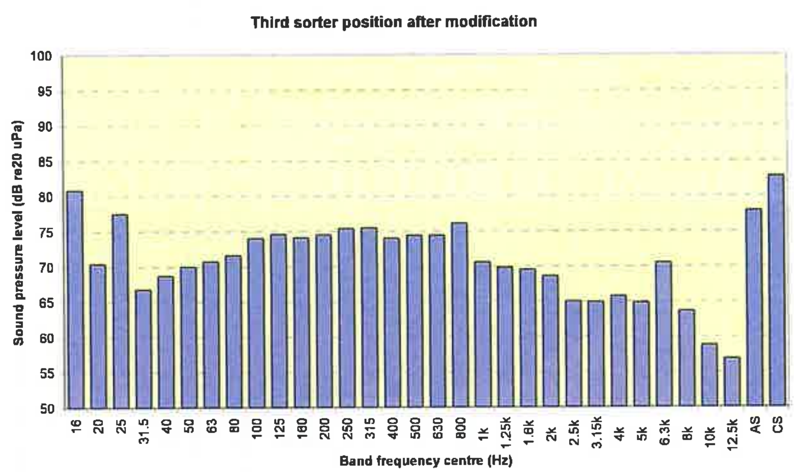


Noise spectra before grading line modifications



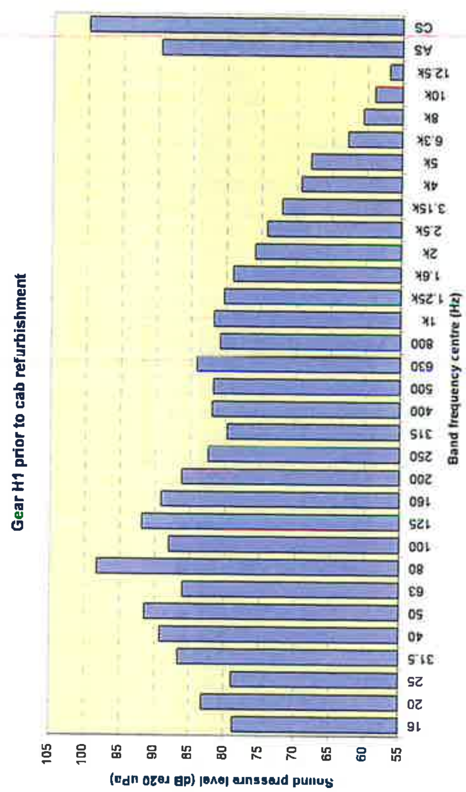


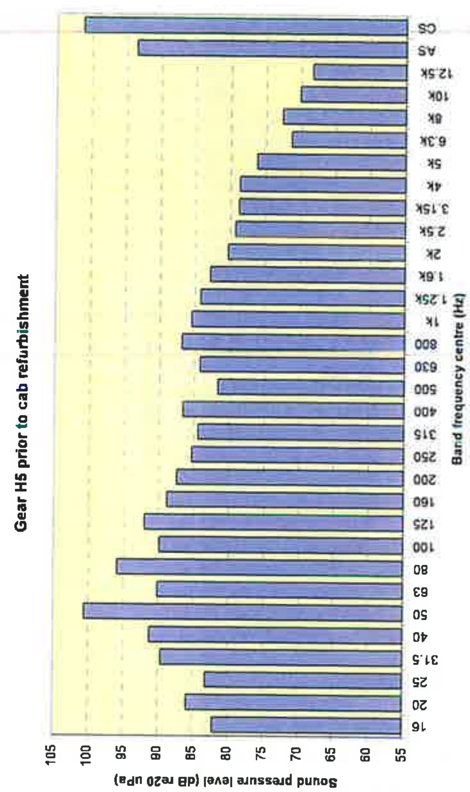


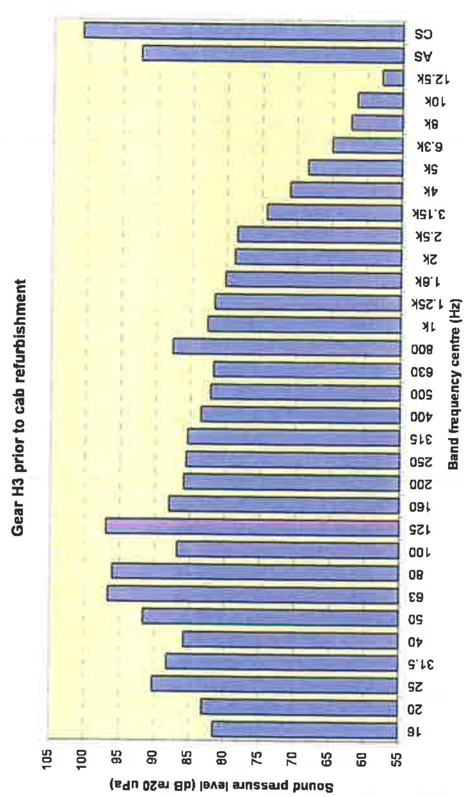


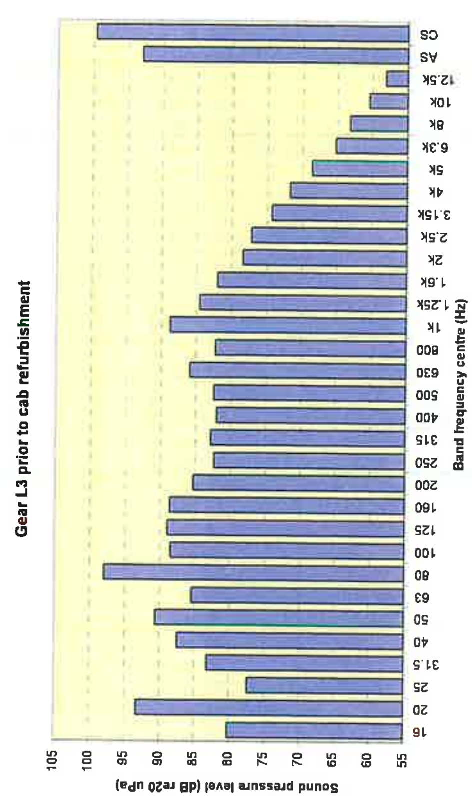
Noise spectra after grading line modifications

A2.6 Tractor Q-cab refurbishment

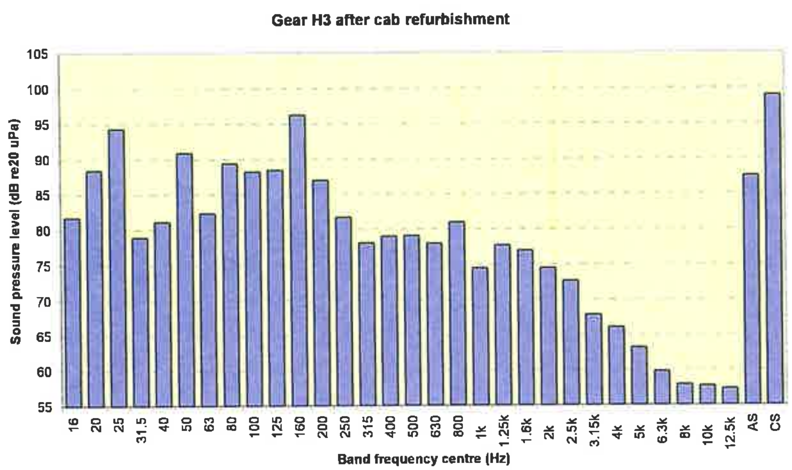


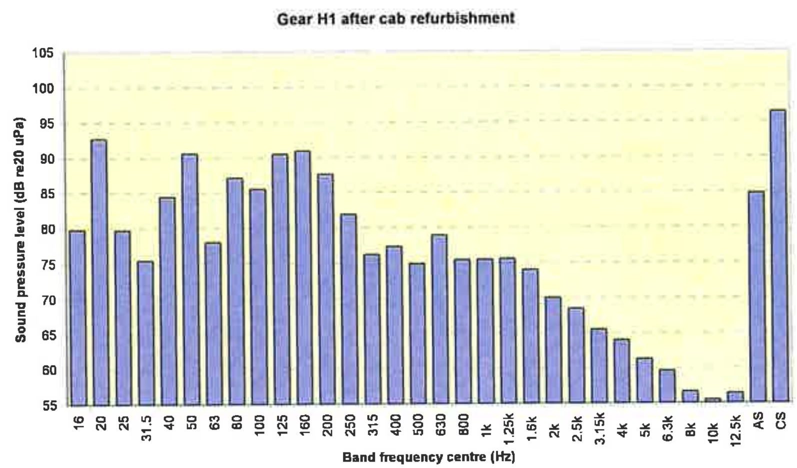


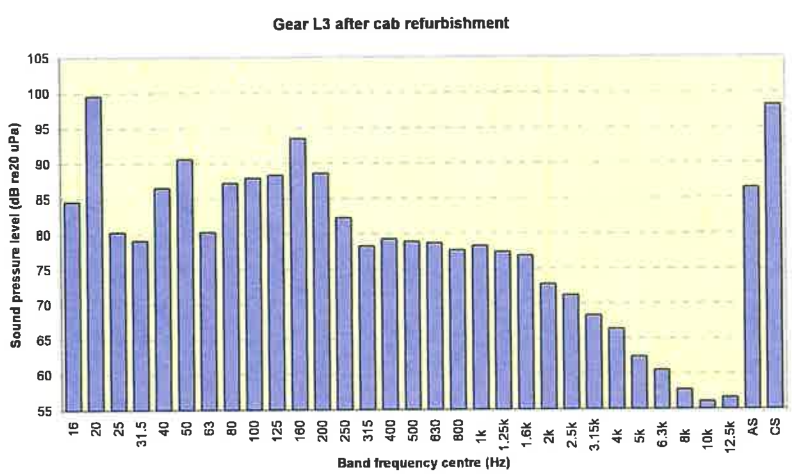


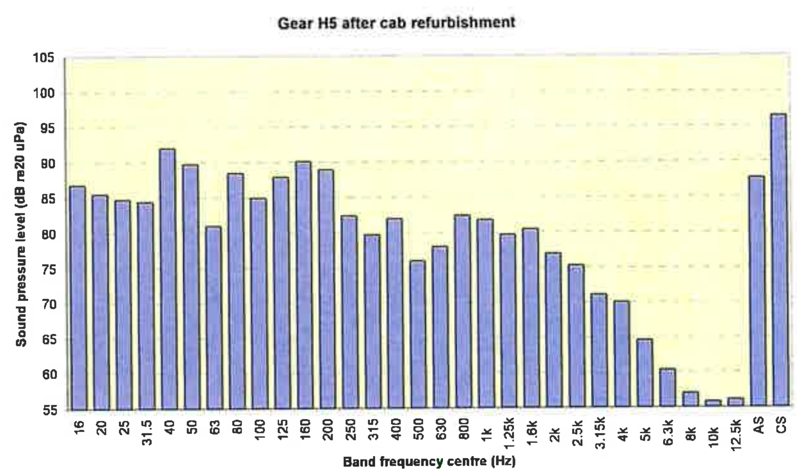


Noise spectra prior to tractor Q-cab refurbishment









Noise spectra after tractor Q-cab refurbishment

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Appendix 9

Table 1. Equipment Noise	
Equipment	dB(A)
Cleaner	87
Conveyor	84
Hammer Mill	88
Medium Duty Truck	76
Heavy Duty Truck	80

Table 2. Railroad Noise									
Distance (ft)	100	200	300	400	500	700	1,000	2,000	5,000
CNEL (dBA)	74	70	67	64	62	60	57	51	44

Table 3 Imperial County Interstate and State Highway Traffic Noise Data (2015 Conditions)							
Road Segment	Traffic Volume (thousands)	Noise				Increases	
		Reference CNEL dB	Distance to ___ dB			CNEL dB	Distance to 60 CNEL feet
			70 ft	65 ft	60 ft		
SR-98							
w/o 111	26.1	76	209	660	1710	3	760
SR-111							
s/o 86W	43.0	78	349	1075	2305	2	650

Table 4 Property Line Noise Limits		
Zone	Time	Applicable Limit One-hour Average Sound Level (Decibels)
Light Industrial/Industrial Park Zones	Anytime	70
General Industrial Zones	Anytime	75

Table 5 Noise Reduction (Inverse Square Law)	
Square Feet	Reduction (dB)
26,136	0
104,544	6
235,224	12
418,176	18

Table 6 Noise Reduction (Large Enclosure)	
Enclosure	**dB reduction**
Large Building	5-8 dB
Commercial	30-40 dB

Appendix 10

Line Item	Description	Quantity
1	Fiber Track 660	1
2	Shaker table	1
3	Bale unwind and infeed	1
	Hurd Collection, Cleaning and sizing	
4	Hurd Outfeed Conveyor	7
5	GCS and Super Sack collection stand	1
6	Primary Hurd Cleaner	1
7	GCS 500 Screen Cleaner	1
8	Super sack tote semi auto filler printer	1
	Fiber Cleaning and Collection	
9	Fiber Bale unit	1
10	Fiber Primary cleaning unit	1
11	Fiber secondary cleaning unit	1
	Dust refinement and Containment system	
12	Dust Vacuum system	1
13	Dual stage hammer mill system	1
Total		

Foot Print (WxLxH) [in]	Weight each
101"X83"X75"	10500
97"x80"x70 1/2"	2600
100"x207"x71"	6000
26x206x26	450
56x49x46	150
126x88x76 w/o stand, 126x88x124 w/ stand	4200
75x88.5x61 w/o stand, 75x112x116 w/ stand	3300
214x48x91	8000
104x62x96	4500
104x62x96	4500
76x 48x80	2000
	5750

Total weight	Amp draw	Voltage	Kilowatts	Power (kWh)
10500	40	480	33	264
2600	8	480	7	56
6000	20	480	17	136
3150	21	480	18	144
150				
4200	40	480	33	264
3300	6	480	5	40
8000	45	480	37	296
4500	40	480	33	264
4500	45	480	37	296
2000	15	460	13	104
5750	220	460	183	1464
				3328

APPLICATION

CHANGE OF ZONE

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236

- APPLICANT MUST COMPLETE ALL NUMBERED (black & blue) SPACES – Please type or print -

1. PROPERTY OWNER'S NAME Salton Group LLC	EMAIL ADDRESS george1000@yahoo.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 2711 N. Sepulveda Blvd Ste 233 Manhattan Beach, CA	ZIP CODE 90266	PHONE NUMBER 310-363-7163
3. ENGINEER'S NAME CA. LICENSE NO.	EMAIL ADDRESS	
4. MAILING ADDRESS (Street / P O Box, City, State)	ZIP CODE	PHONE NUMBER

5. ASSESSOR'S PARCEL NO. 058-010-052-000	ZONING (existing) A-2-U	ZONING (proposed) M-1
6. PROPERTY (site) ADDRESS 551 Pruett Road, Calexico, CA 92231		SIZE OF PROPERTY (in acres or square foot) 44.81 Acres
7. GENERAL LOCATION (i.e. city, town, cross street) Vacant Land - About West Cole Blvd and Pruett Rd, Calexico, CA 92231		
8. LEGAL DESCRIPTION See attached as Exibit A		

8. DESCRIBE CURRENT USE ON / OF PROPERTY (list and describe in detail)
Vacant land

9. PLEASE STATE REASON FOR PROPOSED USE (be specific)
See attached as Exibit B

10. DESCRIBE SURROUNDING PROPERTY USES
Mostly vacant land. Adjacent property is zoned M-1 and used as a trucking depot, parkinglot for trucks

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT.

George Egbuonu — 12/20/21
Print Name — Date

Signature

REQUIRED SUPPORT DOCUMENTS

A. SITE PLAN
B. PRELIMINARY TITLE REPORT (6 months or newer)
C. FEE
D. OTHER

APPLICATION RECEIVED BY:	MM	DATE	1/3/2022
APPLICATION DEEMED COMPLETE BY:		DATE	
APPLICATION REJECTED BY:		DATE	
TENTATIVE HEARING BY:		DATE	
FINAL ACTION: ☐ APPROVED ☐ DENIED		DATE	

REVIEW / APPROVAL BY OTHER DEPT'S required.
- ☐ P. W.
- ☐ E. H. S.
- ☐ A. P. C. D.
- ☐ O. E. S.
- ☐
- ☐

ZC #

RECEIVED
FEB 0? 2022
IMPERIAL COUNTY
PLANNING DEVELOPMENT SERVICES

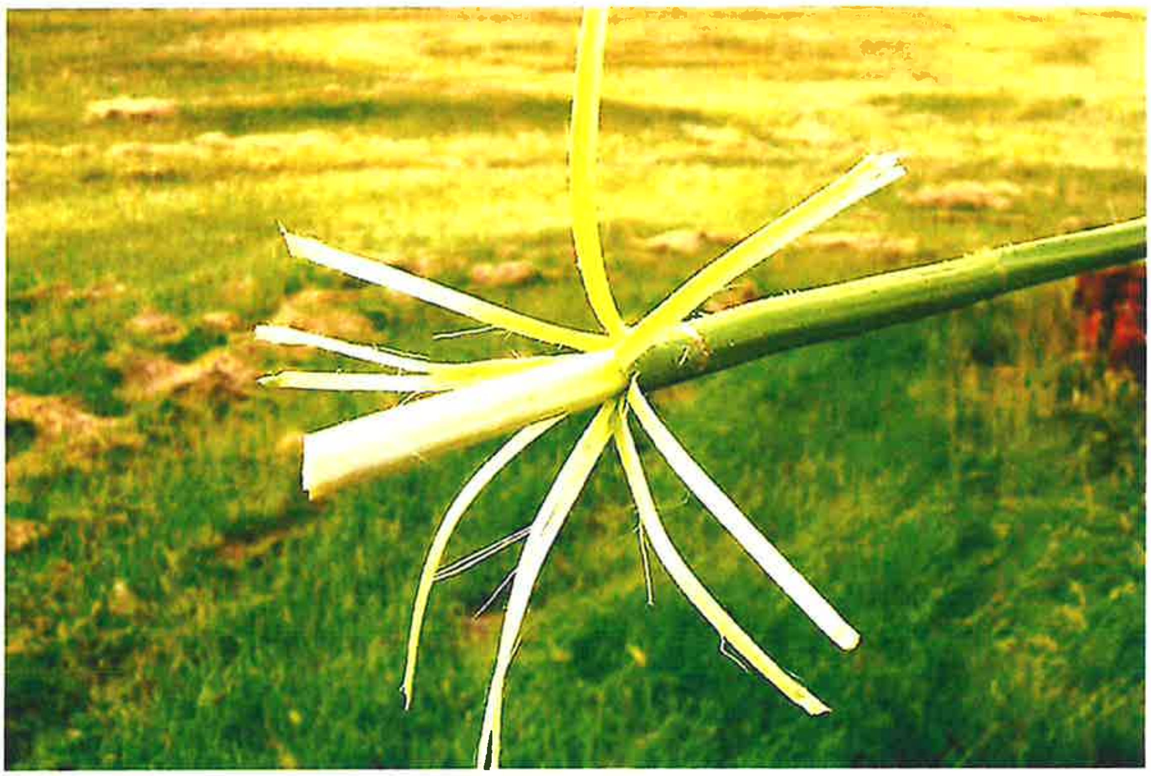
EXIBIT B

PROPOSED USE (PROJECT DESCRIPTION)

For APN/Parcel ID(s): 058-010-052-000

The intent of the zone change is for the proposed use of Industrial Hemp Processing.

We plan to process the stalk of grain hemp through a process called decortication. Hemp stalk has no THC content and the type used for industrial hemp processing is of the grain or fiber type varieties.



Hemp stalks showing its fibers located in the core of the stem.

We shall have a decorticator equipment installed that will take the Dry "green" or retted stalk of the hemp product, process it and output hurd and fiber material. The decorticated process for hemp removes the tough woody interior (the hurd material), from the softer, fibrous exterior of the stalk. Decortication generates both hurd as well as bast fiber materials, which are cellulosic fibers found in the phloem of the stem. Each is useful, but with different applications.

Upon processing it will then be packaged and shipped for such applications as for use in animal bedding, fiber board, press wood, ropes, textile applications, hempcrete, carpets, etc.

In order to process any crop in California, including hemp, we will register with the California Department of Food and Agriculture Market Enforcement Branch. We shall obtain a processor license prior to commencing our operation and have obtained the application forms in preparation for submission once the zone change application is approved.

We anticipate that we will create over twenty five jobs at our facility alone and a lot more through our purchase of hemp stalk from local farmers. Farmers will have the opportunity to grow and profit from industrial hemp which is a fantastic rotational crop great for soil nutrition.

How It Works

Starting with dried and chopped whole plants, the material runs through a series of separation machines to create nearly pure end products. The end products are bast fiber and hurd fiber.

Processing for the Hemp Plant's Stalks. Harvesting for fiber production usually begins when plants are in early bloom. Historically, harvesting was done manually by hemp farmers to ensure the stalks would not be damaged. The core or the hurd is separated from the fiber by hand. Because of the fiber's strength, pulling it from the stalks took a lot of manual force.

Today, technology allows hemp crop harvesting and processing to be done by machines with equipment that is advanced enough to take care of the careful separation of the hemp fiber from the stalk.

There are two approaches to separating the hemp bast fiber from the woody core of the hemp called the hurd. This can be done mechanically through decortication or by the retting process. This bast fiber of the stalk is what is often turned into industrial products like rope, canvas, textiles, and clothing.

Retting refers to the process of separating the fiber from the rest of the plant, and it is crucial for ensuring the quality of the fiber produced. The quality can be quite complex as it requires breaking down the bark tissue that binds the fiber. Before hemp can be processed, the retted fiber must be dried to 10-15% moisture.

The hemp stalk is then prepared by the hemp farmers into round bales solid or hollow core, and large square balers are adequate for baling hemp straw. Large round bales with hard cores may be the best as they are denser and will not pick up moisture during storage.

Then loaded on a truck and delivered to the site for processing, packaging and shipping of the finished product as indicated on the site plan. We expect each truck to contain about 20,000 pounds on a single axle, and 34,000 pounds on a tandem axle group.

Hemp Round Bale

Hemp bales stockpiled

Customization. Each separation system with the decorticator equipment is specifically tailored to meet the customer's needs, such as large hurd fiber, small hurd fiber, or pure bast fiber. The customization service is provided at no additional cost.

Clean End Product. All the hemp plant's components will go through cleaning and drying. Generally, the plant's stalks will go through decortication and retting processes. Utilizing agitation along with separation, we are able to produce 95%+ pure end products including hurd fiber and bast fiber. There are only a few other automated systems that can reach this level of purity.

After decortication, the fiber is scutched and hackled. Scutching refers to the dressing of the hemp in preparation for spinning. The process separates the impurities from the raw material, such as seed particles and other matter. Scutching was once done by hand, but it is now done by a machine called a scutcher. Scutching hemp results in long fibers called lines. Hackling or combing removes the hurd particles and any broken fibers and helps align the fibers in a continuous sliver.

Capacity and Speed. Processing of the hemp bales ranging anywhere from 2,000 lbs per hour up to 3,000 lbs per hour. The Hemp Fiber Classifier separates the whole hemp plant at industrial scale into usable fractions.

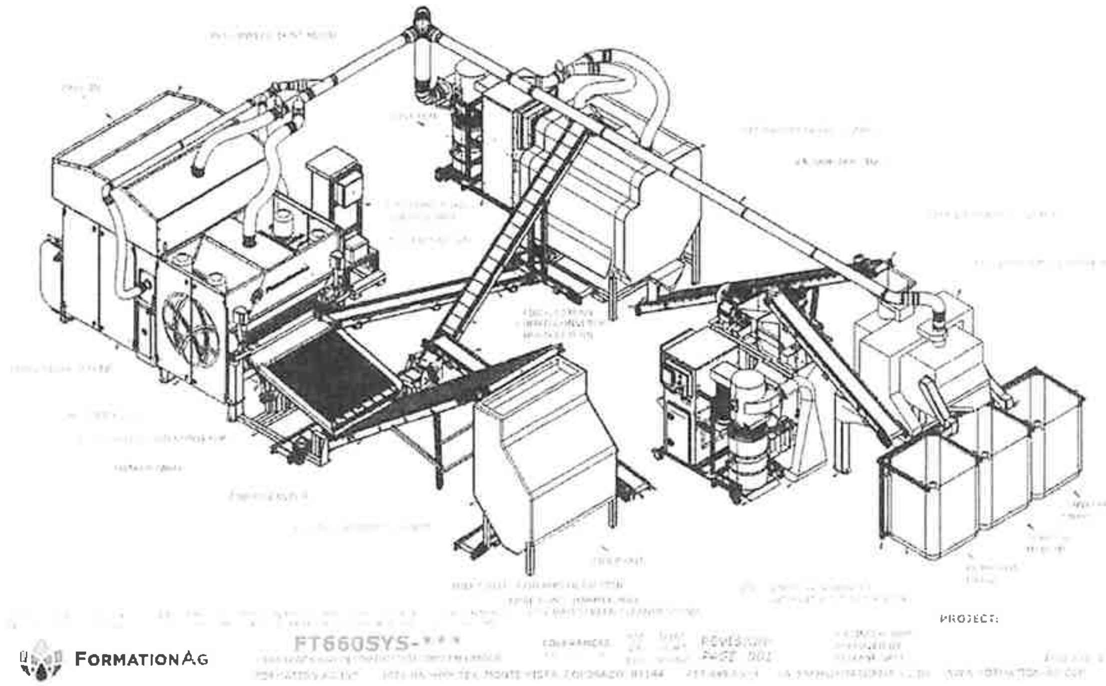
Background

Today in Imperial county there is no processing facility for Industrial Hemp. With thousands of acres available for farming, we will be able to process all the industrial hemp that is produced.

We currently have +/- 44 Acres available with more than enough space for truck parking, loading and offloading of hemp stalk. As well as for the finished packaged processed hemp for its different applications.

As indicated in the site plan, we have an existing building structure on the property that will be renovated to house the decorticator equipment and store the finished fiber and hurd materials under a controlled environment.

Sample decorticated equipment been fed hemp stalk and outputting processed material.



Schematic Layout and Floor plan of Complete Decorticator Equipment

Hours and Days of Operations

The proposed hours of operations will be from 9am – 5pm from Monday – Friday.

Hemp Source and Destination

The proposed source of the hemp will be from farmers in Imperial County. Farmers will be incentivized to plant hemp stock once they realized that there is an off-taker facility located in Imperial County with a decorticated equipment.

Proposed destination for the sale of the finish hemp products will be within 500 miles from the facility.

Proposed Area to be Developed

The proposed area to be developed will be over 50% of the lot size at about 25 acres as indicated in the site plan. We plan to in the future co-locate a dry and cold storage facility in the undeveloped areas.

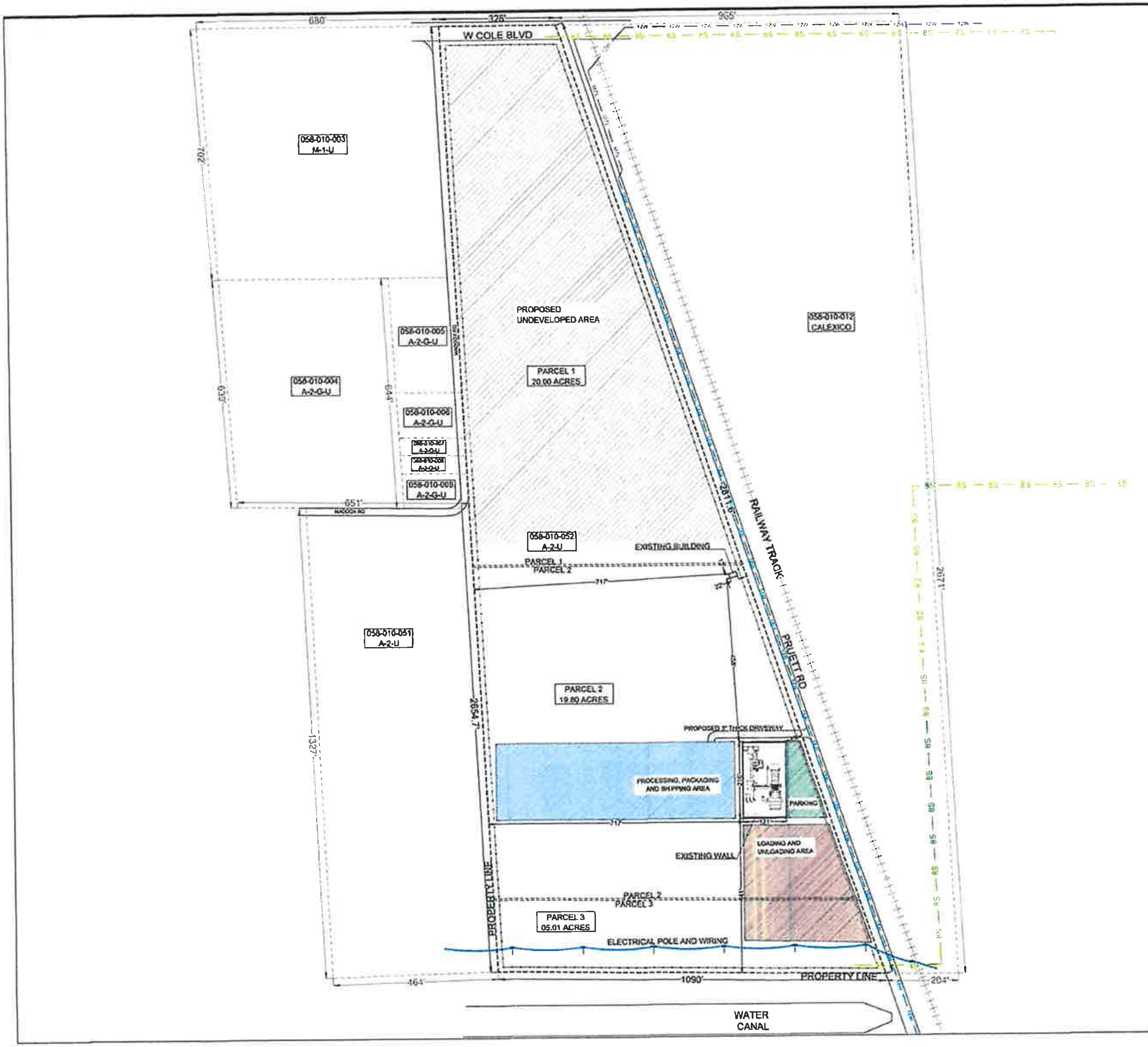
Estimated Daily Traffic

We expect very minimal traffic. About one or two trucks a day entering and leaving the facility. We expect the size of the hemp bales to be 20,000 pounds on a single axle, and 34,000 pounds on a tandem axle group.

Water and Sewer

Water will be provided by Imperial Irrigation District (IID). The property already has a water gate and meter serviced by IID.

For sewer, we plan to use a septic system for the few toilets at the production facility.



REMARKS:

LEGENDS:

- SEWER LINE 8"
- WATER LINE 18"
- WATER LINE 12"

SITE PLAN

FLOOR PLAN & SCHEMATIC LAYOUT

THE WEST COLE BLVD CALEXICO TRUST

PARCEL NO: 058-010-052

LOT AREA: 44.81 ACRES

STAMP

DATE: 12.21.2021

SCALE: 1/350" = 1'0"

PLOT SIZE: 8.5" x 11"

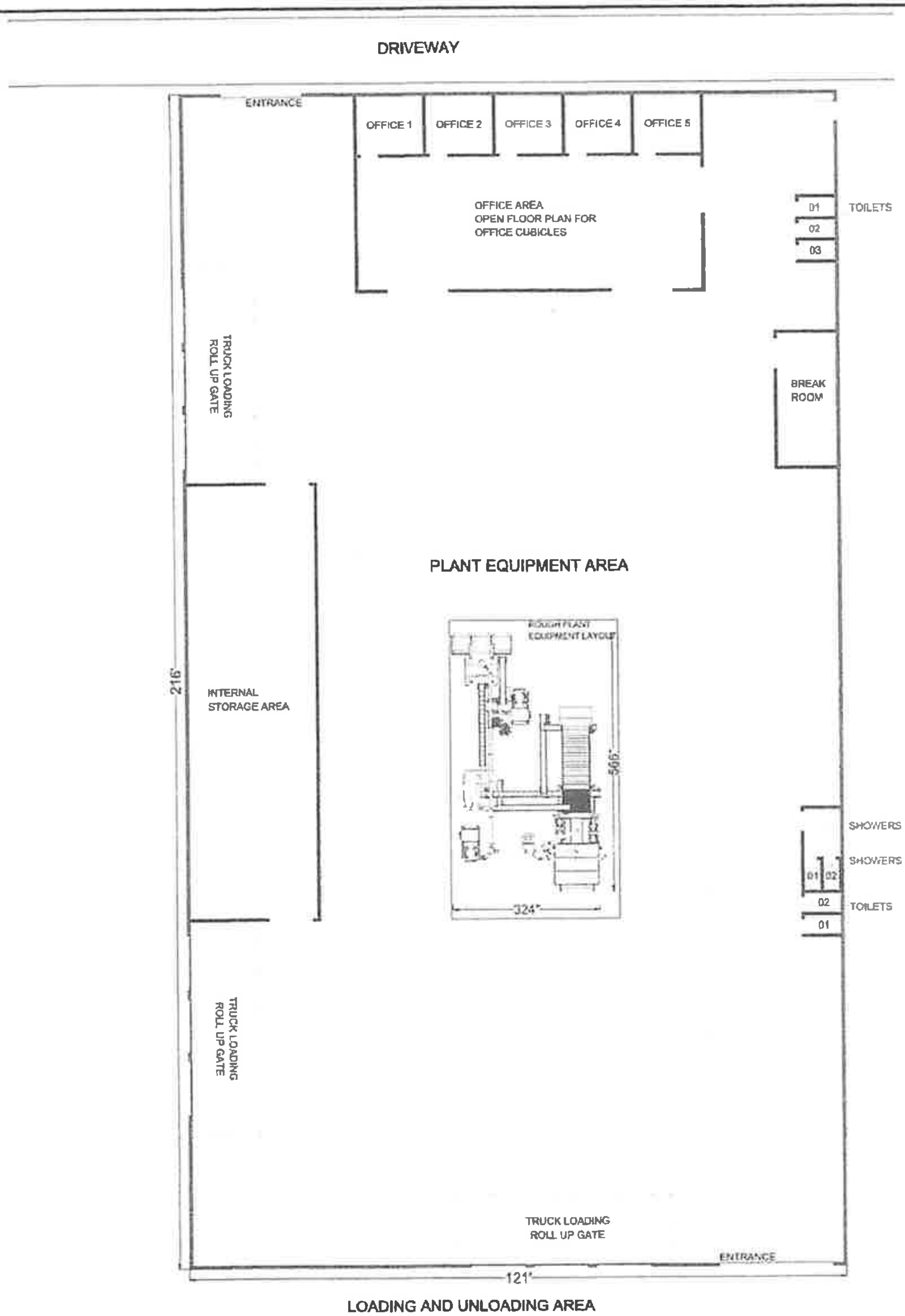
NAME: GEORGE EGBUONU

TELEPHONE NUMBER: 310-363-7163

N W E S

0 175' 350'

SHEET NO.: 01



REMARKS:

LEGENDS:

FLOOR PLAN
SCHEMATIC LAYOUT

THE WEST COLE BLVD CALEXICO TRUST

PARCEL NO.: 058-010-052

LOT AREA: 44.81 ACRES

DATE: 12.21.2021

SCALE: $\frac{1}{30}$" = 1'0"

PLOT SIZE: 8.5" x 11"

NAME: GEORGE EGBUONU

TELEPHONE NUMBER: 310-363-7163

SHEET NO.: 01

ZC#21-0004 APN #058-010-052-000

1" = 752 ft	Sub Title	02/09/2022		

This map may represents a visual display of related geographic information. Data provided here on is not guarantee of acutual field conditions. To be sure of complete accuracy, please contact the responsible staff for most up to date information.

POR. CITY OF CALEXICO & ESTRADA INDUSTRIAL PARK

FM 19-8

& POR. SEC. 11&12 T17S, R14E & POR. TRACT 41 1/2 T17S, R14/15E
MEADOW VILLAGE SUBD. UNIT NO.1 & WEST MEADOW VILLAGE SUB. UNIT NO.4

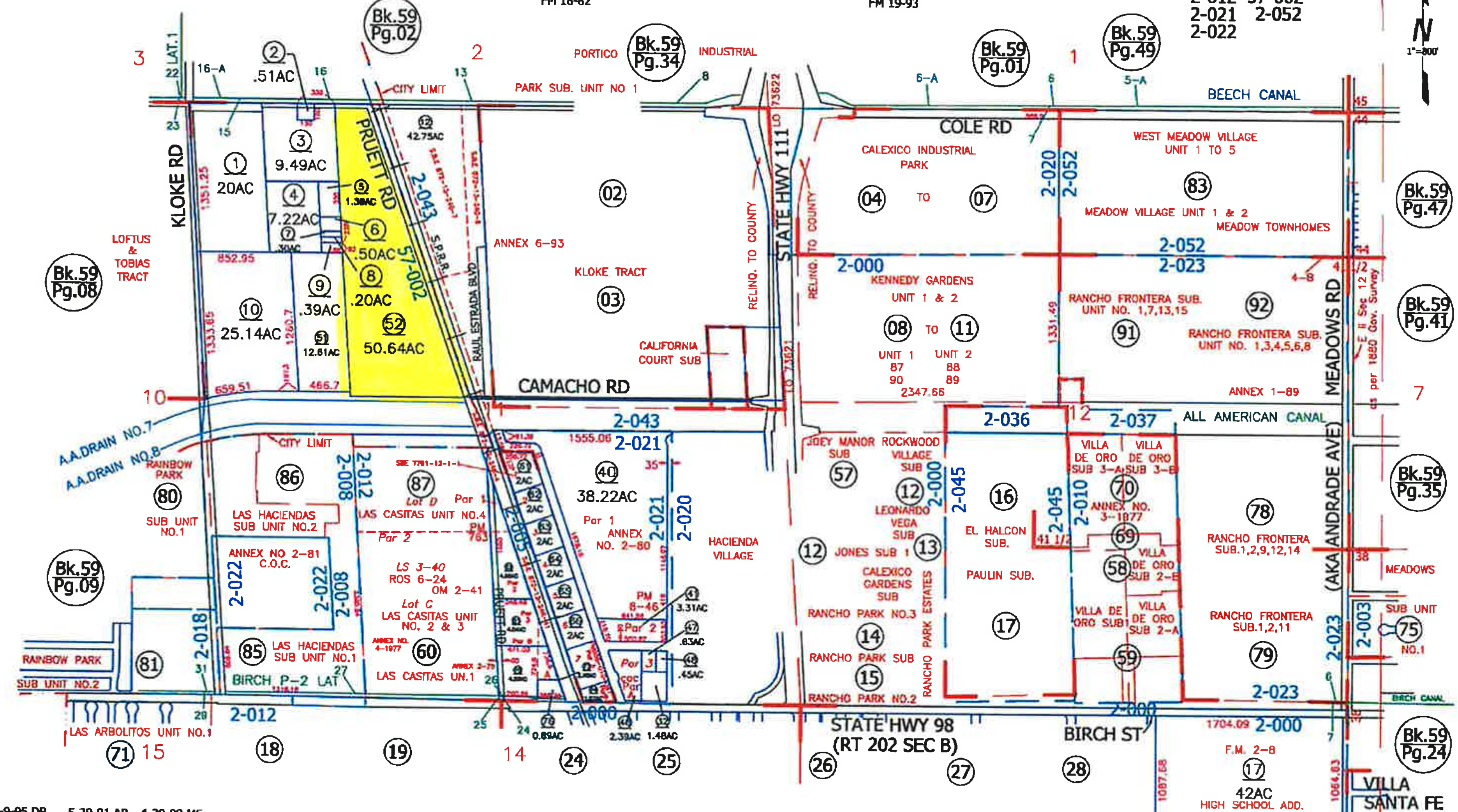
FM 18-82 FM 19-93

Tax Area Code

2-000	2-023
2-005	2-030
2-008	2-043
2-012	57-002
2-021	2-052
2-022	

58-01

N 1"=800'



8-9-95 DP	5-29-01 AR	4-30-09 MF	
3-2-93 DP	5-17-01 AR	2-05-09 MF	
2-2-93 DP	5-14-01 AR	02-16-05 RM	
3-28-94 RM	10-15-99 LS	1-28-05 AR	
6-16-94 LS	9-8-98 LS	1-23-02 AR	10-24-17 MF
11-9-94 RM	7-29-97 RM	12-19-01 AR	7-21-11 MF
FROM 57-86	2-5-96 RM	6-21-01 AR	8-4-10 MF

CITY OF CALEXICO
Assessor's Map Bk.58-Pg.01
County of Imperial, Calif.

COMMENTS

Michael Abraham

From: georgy <georgy1000@yahoo.com>
Sent: Tuesday, July 19, 2022 12:05 PM
To: Michael Abraham
Subject: Re: Proposed Zone Change for future industrial hemp-processing facility near SR-111-Calexico

CAUTION: This email originated outside our organization; please use caution.

Hello Michael,
Thanks for the comment below. We are updating the Initial Study and would address Caltrans concerns.
We should have to you the updated Initial Study within the next day or so.

Regards,
George

On Monday, July 18, 2022 at 10:56:50 AM PDT, Michael Abraham <michaelabraham@co.imperial.ca.us> wrote:

Good Morning George,

Please see comment below from Caltrans.

Thanks,

From: Sanchez Rangel, Rogelio@DOT <roger.sanchez-rangel@dot.ca.gov>
Sent: Monday, July 18, 2022 10:33 AM
To: Michael Abraham <MichaelAbraham@co.imperial.ca.us>
Subject: Proposed Zone Change for future industrial hemp-processing facility near SR-111- Calexico

CAUTION: This email originated outside our organization; please use caution.

Hi Michael,

At this time please continue to coordinate with Caltrans as the project moves forward. Please provide any environmental documents and or VMT or Traffic Studies for Caltrans review when available.

Thank you

Assessment #21-0031 for Zone Change 21 #21-0004. *Applicant: Saltc*
proposing to change the zoning of a 50.64-acre parcel from A-2-U (Genei
Area) to M-1 (Light Industrial Zone) for a future industrial hemp-processin
described as a portion of the East Half, of the Northwest Quarter of Section
an Unincorporated Area of the County of Imperial, State of California, Asse
052-000, (551 Pruett, Calexico, CA 92231, and; Supervisorial District #1), [Mi
or by email at michaelabraham@co.imperial.ca.us].

Jim Minnick, Chairman
Environmental Evaluation

Si usted requiere esta información en español, favor de llamar al

S:\Clerical\AGENDAS\2022\EEC\07 28 22 EEC Agenda.

Rogelio Sanchez

Associate Transportation Planner

California Department of Transportation

roger.sanchez-rangel@dot.ca.gov

Tel (619) 987-1043

Michael Abraham

From: georgy <georgy1000@yahoo.com>
Sent: Monday, March 7, 2022 2:22 PM
To: Jeanine Ramos; Mariela Moran
Cc: Michael Abraham
Subject: Re: ZC21-0004 Zone Change Application

CAUTION: This email originated outside our organization; please use caution.

Hello Mariela,
This is to confirm receipt of the comments letters from the CEOs Office and Imperial County Fire Department.

We will comply with both letters requirement as stipulated.

Regards,
George Egbuonu
Salton Group, LLC
Tel: 310-947-9929

On Monday, February 28, 2022, 08:18:37 AM PST, Mariela Moran <marielamoran@co.imperial.ca.us> wrote:

Good morning,

We have received the attached comment letter from Fire Department for your review and respond.

Thank you,

From: Mariela Moran
Sent: Monday, February 28, 2022 8:14 AM
To: georgy <georgy1000@yahoo.com>; Jeanine Ramos <JeanineRamos@co.imperial.ca.us>
Subject: RE: ZC21-0004 Zone Change Application

Good morning,

We have received the attached comment letter from CEOs office for your review and respond.

Michael Abraham

From: georgy <georgy1000@yahoo.com>
Sent: Tuesday, July 19, 2022 1:39 PM
To: Michael Abraham
Subject: Re: Proposed Zone Change for future industrial hemp-processing facility near SR-111-Calexico

CAUTION: This email originated outside our organization; please use caution.

Hi Michael,

This email is below is been forwarded to the County of Imperial, as I believe it is the agency's responsibility to conduct the Native American consultation.

Although the Tribe is located in way out in Thermal over 1+ hour away from the project site.

Thank you,
George

-----Original Message-----

From: GW Res <grestmtm@gmail.com>
To: Andrew.Green@nahc.ca.gov
Cc: tierraenv@aol.com; Willie Micklin <ceo@ebki-nsn.gov>; Torres-Matinez Cultural Committee <cultural-committee@torresmartinez-nsn.gov>
Sent: Tue, Jul 19, 2022 10:03 am
Subject: Re: 2894 Industrial Hemp Processing Facility Project

Good afternoon Andrew

I am responding on behalf of our the Torres Martinez Cultural Committee this project fall within our Tribes Traditional landuse area and we are resquesting proper Tribal Consultation to address any questions comments or concerns our Tribe may have on the potential impacts and proper mitigation to our Tribal Cultural Resource located within this Project Area of Potential impacts.

Our Cultural Committee is requesting a meeting for further discussion regarding this matter.

Our next scheduled Cultural Committee meeting is August 4 and August 11 at our Torres Martinez Tribal Administration 12pm. (Zoom)

We appreciate your time and effort in helping us protect our Tribes Traditional Cultural Resource

Any questions comments or concerns please feel free to contact us.

Respectfully
Gary Wayne Resvaloso Jr
Torres Martinez Desert Cahuilla Indians MLD
70-555 Pierce St
Thermal Ca, 92274
(442) 256-2964
grestmtm@gmail.com

Our lives begin to end the day we become silent about things that matter.
Martin Luther King Jr.

On Thu, Jul 7, 2022, 2:03 PM Green, Andrew@NAHC <Andrew.Green@nahc.ca.gov> wrote:

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good Afternoon,

Attached is the response to the project referenced above. If you have any additional questions, please feel free to contact our office email at nahc@nahc.ca.gov.

Regards,

Andrew Green

Native American Heritage Commission

1550 Harbor Blvd., Suite 100

West Sacramento, CA 95691

Andrew.Green@nahc.ca.gov

Direct Line: (916) 573-1072

Office: (916) 373-3710

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

IMPERIAL COUNTY CALIFORNIA 1907

February 23, 2022

Mr. Jim Minnick
Planning & Development Services Director
801 Main St.
El Centro, CA 92243

RECEIVED
FEB 23 2022
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

SUBJECT: **Zone Change 21 0004 Salton Group LLC (Cannabis)**

Dear Mr. Minnick:

The Imperial County Air Pollution Control District ("Air District") thanks you for the opportunity to review the application regarding Zone Change (ZC) 21-0004 at 551 Pruett Road in Calexico, California (also identified as Assessor Parcel Number 058-010-052-000). The applicant proposes a zone change from A-2-U (General Agriculture Zone in an Urban Area) to M-1 (Light Industrial) for a future industrial hemp processing project.

The Air District has no comment on the zone change itself, but development of the proposed hemp processing facility must adhere to Air District rules and regulations.

The Air District's rule book can be accessed via the internet at https://apcd.imperialcounty.org. Click on "Rules & Regulations" on the top of the page. Should you have questions, please call our office at (442) 265-1800.

Sincerely,

Curtis Blondell

Curtis Blondell
APC Environmental Coordinator

Reviewed by,
Monica N. Soucier
APC Division Manager

COUNTY EXECUTIVE OFFICE

Benjamin Salorio
Interim - County Executive Officer
bensalorio@co.imperial.ca.us
www.co.imperial.ca.us

County Administration Center
940 Main Street, Suite 208
El Centro, CA 92243
Tel: 442-265-1001
Fax: 442-265-1010

February 24, 2022

TO: Mariela Moran / Jeanine Ramos, Planning and Development Services Department

FROM: Rosa Lopez, Executive Office

SUBJECT: Request for Comments – Salton Group, LLC-ZC21-0004

The County of Imperial Executive Office is responding to a Request for Comments Salton Group, LLC-ZC21-0004. The Executive Office would like to inform the developer of conditions and responsibilities should the applicant seek a Conditional Use Permit (CUP). The conditions commence prior to the approval of an initial grading permit and subsequently continue throughout the permitting process. This includes, but not limited to:

- Sales Tax Guarantee. The permittee is required to have a Construction Site Permit reflecting the project site address, allowing all eligible sales tax payments are allocated to the County of Imperial, Jurisdictional Code 13998. The permittee will provide the County of Imperial a copy of the CDTFA account number and sub-permit for its contractor and subcontractors (if any) related to the jobsite. Permittee shall provide in written verification to the County Executive Office that the necessary sales and use tax permits have been obtained, prior to the issuance of any grading permits.
- Construction/Material Budget: The permittee will provide the County Executive Office a construction materials budget: an official construction materials budget or detailed budget outlining the construction and materials cost for the processing facility on permittee letterhead.

Should there be any concerns and/or questions, do not hesitate to contact me.

RECEIVED

FEB 24 2022

IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

ADMINISTRATION / TRAINING
1078 Dogwood Road
Heber, CA 92249

Administration
Phone: (442) 265-6000
Fax: (760) 482-2427

Training
Phone: (442) 265-6011

IMPERIAL COUNTY
CRASH RESCUE
FIRE

OPERATIONS/PREVENTION
2514 La Brucherie Road
Imperial, CA 92251

Operations
Phone: (442) 265-3000
Fax: (760) 355-1482

Prevention
Phone: (442) 265-3020

February 25, 2022

RECEIVED

FEB 25 2022

IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

RE: Zone Change ZC21-0004
Salton Group LLC

Address: 551 Pruett Road Calexico CA 92231
APN: 058-010-052

Imperial County Fire Department would like to thank you for the opportunity to review and comment on the zone change for the Salton Group LLC (ZC21-0004) located at 551 Pruett Road Calexico CA 92231.

Imperial County Fire Department has the following comments and/or requirements.

- An approved water supply capable of supplying the required fire flow determined by appendix B in the California Fire Code shall be installed and maintained. Private fire service mains and appurtenance shall be installed in accordance with NFPA 24.
- Fire Department access roads shall be installed and maintained in accordance with the California Fire Code. Roadways within the project will be provided with all-weather surface and capable of supporting impose loads of fire apparatus. Secondary access will be required for the project. Roadway width will be determined upon further review of the site plan. Knox box (locks) will be required for the project. All locks and gates shall be installed in accordance with the California Fire Code.
- Automatic fire sprinklers requirements will be determined by Imperial County Fire Department officials and the California Fire Code
- Automatic fire detection and notification systems requirements will be determined by Imperial County Fire Department officials and the California Fire Code.
- High Pile and Combustible storage requirements will be determined by Imperial County Fire Department officials and the California Fire Code.
- Compliance with all required sections of the fire code.
- Processing and extraction process shall be in accordance with the California Fire Code Chapter 39 Processing and Extraction facilities.
- Combustible fibers shall be in accordance with the California Fire Code Chapter 37 Combustible Fibers.
- High Pile Combustible Storage shall be in accordance with the California Fire Code Chapter 32 High-Piled Combustible Storage.

ADMINISTRATION / TRAINING
1078 Dogwood Road
Heber, CA 92249

Administration
Phone: (442) 265-6000
Fax: (760) 482-2427

Training
Phone: (442) 265-6011

OPERATIONS/PREVENTION
2514 La Brucherie Road
Imperial, CA 92251

Operations
Phone: (442) 265-3000
Fax: (760) 355-1482

Prevention
Phone: (442) 265-3020

The zone change will require an approved pressurized water supply capable of meeting required fire flows to be installed and maintained in accordance with the California Fire Code. M-1 zone is used for light industrial use and will require greater water demand due to the potential hazards and fire loads associated with industrial operations. This requirement will be initiated by ICFD official upon complete review of the project and project description and will make that determination before grading permit approval.

Imperial County Fire Department shall review the project for impacts that may create a negative effect on Imperial County Fire Department and/or the County of Imperial in concerns with life safety, property conservation, and/or environmental concerns. These items shall be addressed between Imperial County Fire Department Official, County of Imperial Officials and project applicant and developers.

Imperial County Fire Department reserves the right to comment and request additional requirements pertaining to this project regarding fire and life safety measures, California Building and Fire Code, and National Fire Protection Association standards at a later time as we see necessary.

If you have any questions, please contact the Imperial County Fire Prevention Bureau at 442-265-3020 or 442-265-3021.

Sincerely
Andrew Loper
Lieutenant/Fire Prevention Specialist
Imperial County Fire Department
Fire Prevention Bureau

Robert Malek
Deputy Chief/Deputy Fire Marshal
Imperial County Fire Department
Fire Prevention Bureau